

"HOW
I FIXED
IT—"

THE STORY OF "HOW I FIXED IT"

FORTY-NINE years ago this spring a few mechanics in Greenfield, Massachusetts, started to make and sell taps and dies. These were sold mostly to country blacksmiths for repairing farm implements. Only occasionally did a farmer buy a screw plate for his own use.

In the ensuing years the original company developed into the largest tap and die maker in the world and GTD taps and dies are now being sold more frequently to farmers than to blacksmiths. The farmer has learned that the little jobs the blacksmith never did want to do anyway, because there was no money in them for him, can be done just as well and much quicker at home if suitable repair tools are handy.

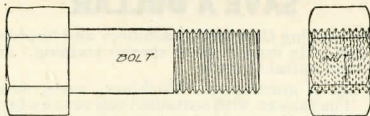
Last year we determined to find just what jobs farmers were using our tools for. So we offered through three of the best known farm publications to buy for a dollar each, stories of actual jobs done by farmers. This book, "How I Fixed It," is the result of replies from a large number of farmers living in eighteen different states. There were many duplicates. Their stories we are passing on to you. To each contributor we want to offer our heartiest thanks, for they alone made "How I Fixed It" possible. Also to Mr. John Y. Beatty, editor of "System On The Farm;" Mr. G. H. Radebaugh of "Power Farming;" Mr. J. K. T. Ekblaw of "Farm and Home," and to a large number of county Farm Agents we owe a debt of gratitude for the assistance and helpful criticisms they have rendered.

If "How I Fixed It" brings to the farmer in the field and home suggestions which make his work lighter and "keep a good many pennies home," as one farmer writes, then we will feel repaid for the time and money we have spent to give you "How I Fixed It".

GREENFIELD TAP & DIE CORP'N.

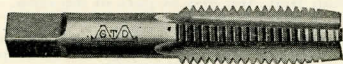
Data Reviewed and Edited by
Elliot D. Drury, Chief, *Research Section*.
Copyright, March, 1921.

WHAT IS A SCREW-THREAD?



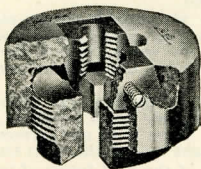
A screw-thread is the spiral ridge cut on a screw or in a nut.

WHAT IS A TAP?



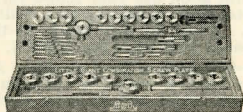
A tap is a tool used for cutting internal screw-threads, (in a nut).

WHAT IS A DIE?



A die is a tool used for cutting external screw-threads, (on a screw).

WHAT IS A SCREW-PLATE?



A screw-plate is an assortment of taps and dies with the necessary tap wrenches and die stocks.

WHAT IS A REAMER?



A reamer is a tool for enlarging, smoothing or tapering holes.

YOU, TOO, CAN MAKE AND SAVE A DOLLAR

Farmers are making their own machinery and implement repairs. Any farmer can. He doesn't need special training. Just ordinary horse sense—and suitable tools.

This is an age of machinery. Machinery rusts, wears, and gets out of kilter. The farmer with suitable tools repairs his implements and keeps them so adjusted that they last for years. Always ready when needed. Never hindering the planting or harvesting. Never costing him anything for a repairman's labor or by holding up his crops. The farmer who has no tools sees his machinery rust and wear until the day comes when in the midst of the harvest or plowing or planting, his machine breaks down entirely, costing him not only the expense of a repairman and brand new parts, but many times more than that, the loss of part of his crop. A loss which would buy him a good many complete sets of repair tools.

The modern farmer, the man who is using farm implements and machinery knows this. He spends part of his crop money each year for good tools, and gradually builds up a repair shop equipment that will take care of all his needs.

With his taps, dies, drills, and pipe tools, he finds that he can make new things, too. A clothes hanger in the closet, a fence-gate, a grindstone handle—in fact, most anything he wants. And on rainy days he can make bolts of different sizes and lengths to be ready for use as needed.

He is independent. He gets his repairs made and his machines back on the job in less time than it would take to get a repairman out to the farm. In the winter he and the boys go over all the implements, strengthen the weak places and make necessary adjustments.

The modern farmer is thus able to go ahead with his farm work, knowing that his machinery won't fall apart. Best of all he knows he's making money. More than one farmer has saved his whole crop by having the right tool at the right time.

Good tools are one of the best forms of insurance a farmer can have, and the Lord knows he needs all kinds, what with storm and drought and blight to contend with to say nothing of labor. With good repair tools he is insured against machine breakages, one of the commonest drains on his pocket book.

But don't take our word for it without proof.

Read on! See what good use your fellow farmers have made of their tap and die sets, pipe stocks and dies, drills and other tools in their repair outfits. You'll be convinced, as they are, that good tools are an investment that pays big interest.

And, just a tip—*buy tools of good quality*. A blooded Holstein gives more milk than a cow from the common herd. So do good tools last longer, work better and do more work than cheap tools.

Quality tools are actually cheapest in the long run.

The following stories of jobs done with taps and dies and other tools were sent in by farmers living in eighteen different states.

Possibly you have had similar experiences with these same tools. If so, we will pay a dollar apiece for each *new* tool story you send us, providing we have not previously received it and that it is accepted for publication by us.

Read their interesting experiences and learn how you too can use these tools to good advantage.

HOW I FIXED IT



MASON CITY, IOWA, FARMER USES 3 WHEEL PIPE CUTTER

Single Wheel Cutter No Good on This
Job

Mr. Roger Kirk of Prairie Ridge Farm built a concrete well pit around a 3" well casing. After the concrete had set, he discovered that his large single-wheel pipe cutter could not be used to cut off the casing as there was not room enough to swing it all the way around. Read how he overcame this difficulty:

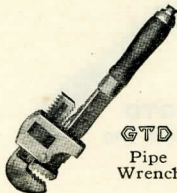
In putting in a new water system, we found it necessary after digging a pit 5' square and lining it with cement to cut off some of the well-casing which projected from the bottom. The well-casing was within 3" of one side of the pit. We borrowed a large 3 wheel pipe cutter and the work was accomplished with ease.

IOWA FARMER MAKES CLOTHES HANGER AND PORTIERE FIXTURES FROM PIECES OF PIPE

Mason City Man Finds Ingenious Use
For His Pipe Tools

Mr. Roger Kirk, Prairie Ridge Farm gives the following instructions for making closet poles from pipe fittings:

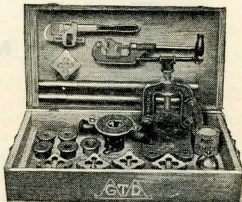
A very handy clothes hanger may be made in the following manner for a closet. Cut a piece of $\frac{3}{8}$ " pipe long enough to go across one end of the closet; thread both ends, and screw on $\frac{3}{8}$ " floor flanges. This can be attached to the wall with screws and should be about 5' 8" from the floor and 10" from the back wall. The appearance may be added to by bronzing after all grease is removed with gasoline. This same fixture may be put up in doorways 2" from the top on which to hang portieres. The light-weight floor flange with 2 screw holes instead of 4 is best.



GTD
Pipe
Wrench



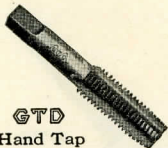
GTD
3 Wheel
Pipe
Cutter



Assortment A
GTD Pipe Tool Set

HOW I FIXED IT

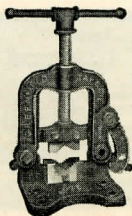
GTD



GTD
Hand Tap



GTD
Burring Reamer



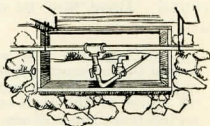
GTD Pipe Vise

ILLINOIS FARMER PIPES WATER TO LIVE STOCK PENS

**Saves Time and Labor Previously Spent
Watering Stock By Hand**

Mr. Ben Dreyer a farmer living on Route 3 at Palatine, figured that he could well afford to spend a little time on a piping system for his live-stock pens even at the busiest time of year. We are glad to print Mr. Dreyer's story just as he wrote it.

I wanted to have water near to the pens where my live stock is kept during the summer, so I would not have to carry it. I had the water piped into my house, but did not have any pipes in the ground extending out to the stock pens. Instead of taking the time this spring when I was very busy to dig trenches and lay these pipes below the frost line, I made an emergency connection to the supply pipe in the basement of my house, and ran this pipe through the window and laid it in a trench about six inches deep, placing faucets at various convenient places along its length. This work I did entirely by myself, and without buying any new pipe. I used old pipes that I had about the place. I used the pipe cutter, the pipe wrenches, and the pipe dies in this work. I used couplings and connections that were already threaded.



MISSOURI FARMER REPAIRS BROKEN OIL-LINE

**$\frac{3}{8}$ " Pipe Tap Used to Stop Leak in
Westogle Stock Farm Tractor
Cam Case**

Mr. Wm. B. Fullerton, Westogle Stock Farm, Belton, Missouri, found that the oil line leading into the cam case of his tractor had broken off short. He removed the broken part and replaced it with a new connection after tapping out the hole with a $\frac{3}{8}$ " pipe tap.

HOW I FIXED IT



"A NEW PART WHERE CAN I GET IT?"

"Make One" Says Illinois Farmer

Second-hand implements are frequently offered at bargain prices, but they usually need some repairs.

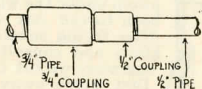
Mr. C. W. Haines of Mendon, Illinois, got a bargain in a corn planter and with his repair tools soon had it in first-class shape. He says:

I bought a second-hand corn planter at a sale. When starting it I found one piece worn till it was too small. "A new one, Oh, where can I get it?" I studied the matter over, cut a thread on the worn part screwed on a bushing, filed it and its working parts till it fitted. I used a $\frac{3}{8}$ " pipe die to cut the thread and a $\frac{3}{8}$ " pipe coupling for the bushing. The piece is better than a new one and only delayed me an hour or two. Having the tools for it saved me the time of sending for a new one besides the price.

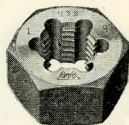
MAKES REDUCER FROM COUPLING

Virginian Furnishes Useful Suggestion

Mr. E. H. Bower of Midland supplies an idea that will be appreciated by all farmers. Reducing couplings are used only occasionally so they are not always on hand when needed. Mr. Bower tells how to make one from an ordinary coupling with the use of a pipe stock and die:



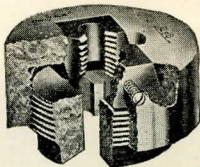
In fitting a line of pipe on a boiler I needed a reducer from $\frac{3}{4}$ " to $\frac{1}{2}$ ". I had some $\frac{1}{2}$ " iron pipe couplings and by running the $\frac{3}{4}$ " die over the outside of the coupling I made a good reducer that saved time from ordering from town.



GTD "Hex" Die
For Re-Threading

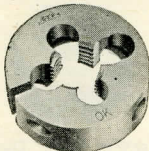


GTD
Repairman's
Taper Reamer



GTD "Little Giant"
Die, Guide and Collet

HOW I FIXED IT



GTD "OK"
Drop-Forged Die

PIPE LINE BARED BY RAIN

Freeze Splits Pipe

Pipe tools in the hands of Cleon B. Warren, Waco, Texas, were the means of repairing a frozen pipe last winter. Mr. Warren tells us:

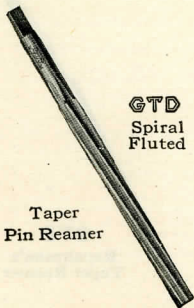
The dirt washed from over the pipe line in the winter. A cold spell came on and the pipe burst. The broken piece was cut out with pipe cutters. The ends were threaded with the ratchet stock and dies and with a connection and piece of threaded (cut to measure) pipe the pipe was connected back with a union. Dirt was placed over the pipe.

AIR CHAMBER SAVES PUMP PACKING

Simple Job Relieves Pressure

Engineers agreed that an air chamber would prevent the repeated blowing out of pump packings so Cleon B. Warren made one as described on his Waco, Texas Farm. Mr. Warren says:

For some time the packing in the pump under the windmill had been forced out very often. After trying several different kinds and consulting several engineers we cut the $\frac{3}{4}$ " pipe that leads away from the pump. After placing in a Tee we reconnected the pipe with a union. To the Tee was connected a 12' 2" pipe. This acted as an air chamber and relieved our trouble.

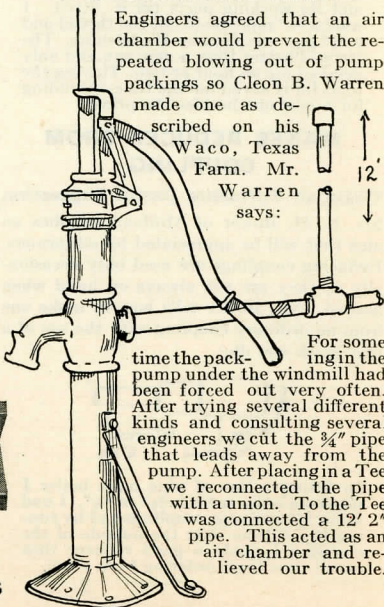


**Taper
Pin Reamer**

**GTD
Spiral
Fluted**



**GTD "Hex" Die Set
For Re-Threading**



HOW I FIXED IT



"WOBBLE STICK" BREAKS

Farmer Repairs Gear Shift Lever

Mr. Charles A. Bukove, Moreno Valley Potato Farm, Agua Fria, New Mexico, knows something besides potatoes. Here's a job that he did to help out a neighbor that shows he knows how to use his head, and his taps and dies:

A neighbor of mine broke the gear shifting lever just above the ball joint on his Chevrolet and as he needed the car bad and didn't like to wait for repairs he asked me to fix it up for him if possible, so this is how I fixed it. I drilled a $\frac{1}{2}$ " hole in the ball socket (where the lever broke off) as far in as would be safe and cut threads as far in as the tap would go then I cut threads $\frac{1}{2}$ " long on the end of the lever and screwed it into place and it was as good as new.



GTD
LINCOLN
Twist Drill
For Bit Brace

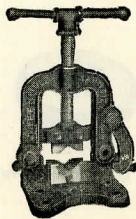
ENGINE PAN BOLT WOULDN'T CATCH

Tractor Troubles Hinder Ensilage Cutting

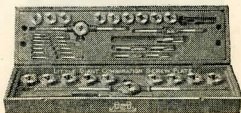
How many times have you had trouble in making a screw thread take hold so you could screw the bolt in? Most of us have experienced this annoying condition and have lost a great deal of time over a job which should take but a second or two.

Mr. C. L. H. Vagts, George, Iowa, had occasion to remove and replace the pan of his tractor engine. He tells us one of the holding screws failed to catch and explains how he fixed it.

I had a loose connecting rod on my tractor while I was filling silo last Fall. After making the proper adjustments I put the pan back, but one of the cap screws that hold the pan in place could not be started. I run the proper size tap in a little way and the cap screw started nicely.



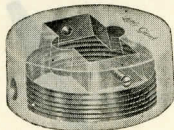
GTD Pipe Vise



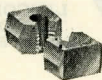
GTD "Little Giant"
Combination Screw Plate

HOW I FIXED IT

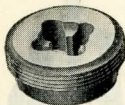
GTD



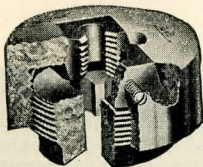
GTD "Little Giant"
Die Cap



GTD "Little Giant"
Die



GTD "Little Giant"
Die Guide



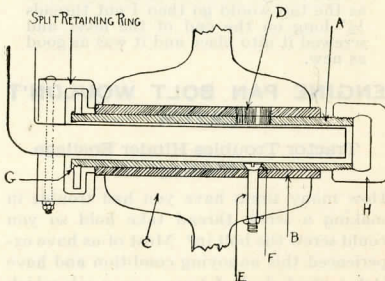
GTD "Little Giant"
Cap, Die and Guide
Assembled

NEBRASKA FARMER TELLS HOW TO MAKE NEW BEARINGS FOR SULKY PLOW WHEELS

Mr. George G. McVicker Devises Novel Plan For Repairing Worn Wheel Shanks

Pipe Stocks and Dies are useful for a great many jobs besides pipe fitting. Mr. McVicker, Route No. 3, North Bend, Nebraska, discovered a rather unusual use for them and gives you the benefit of his experience in the following words:

One of the best uses I have for my pipe dies is in making new bearings for my plow wheels when worn:



Most of the sulky plow wheel shank axles are of $1\frac{1}{4}$ " stock but when worn will allow a $1\frac{1}{4}$ " pipe to fit nicely on them.

I cut a piece of $1\frac{1}{4}$ " pipe (A) with my pipe cutter the required length and cut on one end $1\frac{1}{2}$ " of threads and on the other end $\frac{3}{4}$ " of threads. I then cut a piece of $1\frac{1}{2}$ " pipe (B) just long enough to reach through the hub of the wheel and then place it over the $1\frac{1}{4}$ " pipe. By reaming the ends this slides over but fits snugly. If the $1\frac{1}{4}$ " pipe is galvanized I heat the $1\frac{1}{4}$ " piece and allow it to shrink in place. I then drill a $\frac{1}{2}$ " hole (D) through one side the proper distance from end for retaining bolt and through the opposite side a $\frac{3}{8}$ " hole (E).

HOW I FIXED IT



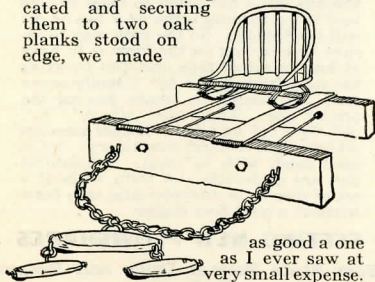
Then countersink the inside of the $\frac{3}{8}$ " hole so as head of bolt will be flush (F). On the inner end of hub I screw a $1\frac{1}{4}$ " lock nut (G) and rivet end of pipe so it will not come off. I then grind off corners on emery wheel so as to make it round and act as the wheel retaining collar. A $1\frac{1}{4}$ " cap (H) closes the outer end to hold grease. Sometimes when the $1\frac{1}{2}$ " pipe does not fill hub of wheel, I center the $1\frac{1}{4}$ " piece and pour cheap Babbett Metal to fill the space.

HOME-MADE LEVELING DRAG

Mr. Demarest Tells How to Make One

This Warwick, N. Y., man's field drag was easy and cheap to make yet very strong and satisfactory.

We wished to make a leveling drag for field use. By threading some rods as indicated and securing them to two oak planks stood on edge, we made



as good a one
as I ever saw at
very small expense.

SOIL AUGER FOR DEEP HOLES

Warwick, N. Y., Man Makes Handle
from Pieces of Pipe

Mr H. P. Demarest, Director of Fruit Department, Orange County Agricultural Society, describes method of extending his soil auger handle.

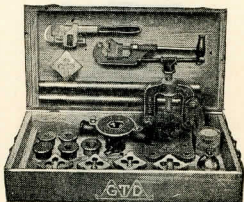
An extension handle was required for our soil auger. By the aid of pipe dies an extension of pipe was easily effected, and a satisfactory long handle was quickly made.



GTD
Pipe
Wrench



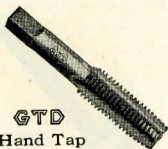
GTD
3 Wheel
Pipe
Cutter



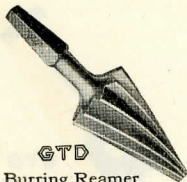
Assortment A
GTD Pipe Tool Set

HOW I FIXED IT

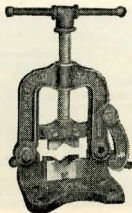
GTD



GTD
Hand Tap



GTD
Burring Reamer



GTD Pipe Vise

NEBRASKA FARMER RECOMMENDS SIZES

Names Taps and Dies Most Suitable for Farm Work

This recommendation from a farmer who has had an exceptional amount of experience with farm repair tools should carry a great deal of weight.

Mr. George G. McVicker, North Bend, Nebraska, has a complete work shop and tool equipment and realizes how necessary good repair tools are.

T bolts for singletrees, wedge-head bolts for cultivator shovels and a hundred and more others. So keeping an assortment to fill the demand is next to impossible. Each bolt must have threads and a nut fitted to them and no tool but a turning lathe or a tap or die will cut threads. So the only way to insure time-saving on the farm is to have at hand a set of taps and dies covering the sizes from $\frac{1}{4}$ " to $\frac{3}{4}$ ". Usually seven sizes are needed to insure having the proper one. These are: $\frac{1}{4}$ ", $\frac{5}{16}$ ", $\frac{3}{8}$ ", $\frac{7}{16}$ ", $\frac{1}{2}$ ", $\frac{5}{8}$ " and $\frac{3}{4}$ ". Larger sizes are seldom used in farm machinery. $\frac{3}{8}$ " is used most, with $\frac{1}{2}$ " next. Adjustable dies are preferable. A farm without a set of dies is as unsystematic as a farm without a post hole digger.

FITTING NEW PLOWSHARES

York State Farmer Drills and Reams by Power

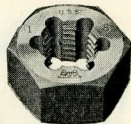
This letter from Mr. Clark P. Schaller, Route No. 4, Troy, New York, mentions a job which probably every farmer in the country has had to do at one time or another, and that is, the fitting of new landsides and plowshares. When necessary to make new bolt holes, Mr. Schaller drills and reams his work by power. His letter follows:

When fitting shares and landsides to plows, one often has to drill new bolt holes and this calls for counter-sinking

HOW I FIXED IT



the holes at a steep pitch. I do this with a small spiral fluted, square shank reamer. I use a chuck from a discarded bit brace of the ratchet type, by inserting the shank in the chuck on my post drill. I can then use square shank reamers and with the force feed, do very rapid work.

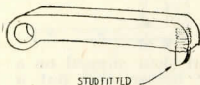


GTD "Hex" Die
For Re-Threading

MAKES CATCH AS GOOD AS NEW

Seeder Dog Repaired

This suggestion from Mr. A. A. Haskell, Conde, South Dakota, describes how he repaired a broken catch. The same directions could be used to make a new one.



On a seeder a little dog or catch was broken off, a hole was drilled and tapped, a stud screwed in and trimmed up

and the part was as efficient as ever.

AIR-WASHER FILLED WHILE TRACTOR RUNS

Saves at Least Half an Hour Each Day

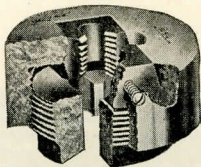
The tractor at Moreno Valley Potato Farm, Agua Fria, New Mexico, had to be stopped several times a day to replenish the water in the air-washer. Mr. Charles A. Bukove worked out a plan to refill the washer while running.

We have a Fordson Tractor on the farm and as it has an air-washer and requires refilling often I got a $\frac{1}{4}$ " brass pipe to run the water in the water chamber from the radiator. I drilled a hole in the radiator casting and one in the air washer even and cut threads in them and fitted the tubing in with a valve close to the washer so I could reach over and turn the water on while moving. This saved at least half an hour each day.

We couldn't get along without taps and dies, I don't see how any progressive farmer could. They are as good an investment as a farmer could make.

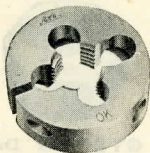


GTD
Repairman's
Taper Reamer

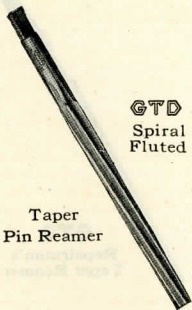


GTD "Little Giant"
Die, Guide and Collet

HOW I FIXED IT



GTD "OK"
Drop-Forged Die



GTD
Spiral
Fluted

Taper
Pin Reamer



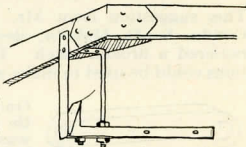
GTD "Hex" Die Set
For Re-Threading

NUMBER HOLDER FOR TRUCK

Iowa Farmer's Workmanlike Job

Mr. Albert Schmidt's truck had no number holder so he bought a part of one and made the rest. This is how he did it:

Some trucks have no place for the number. I know mine did not so I made this one using a $\frac{1}{2}$ " bolt, flattened one end and bored holes to fasten to frame. Then I bent same in shape shown and threaded same up above 4 or 5 inches and put a burr on and then slipped on a boughten number holder and put a burr on. I bent another brace and put it under the number holder then put lock-washer and burr on and fastened brace also on truck frame to keep from vibrating.

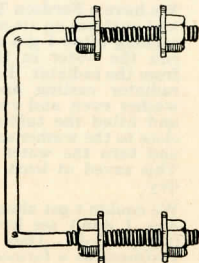


THIS HANDLE WON'T COME OFF WHEN DOOR STICKS

Melvin, Ohio Farmer Makes Extra Strong One

If you have a stubborn door about the place here's a good way to conquer it. Fit a handle like this one described by Mr. Schmidt:

This handle should be on large roller doors which push quite hard and can be used on most any screen doors. I have seen lots of people use a spool nailed to a door which does not give very good grip. Can be made most any size of from $\frac{3}{8}$ " to $\frac{1}{2}$ " iron.



HOW I FIXED IT



NORTH BEND FARMER MAKES BOLTS WITHOUT LEAVING HAY FIELD

Nebraska Man's Haying Outfit Includes Repair Equipment

A screw plate, vise, hack saw, and supply of steel rods with nuts of the proper size are an important part of Mr. George G. McVicker's haying outfit. With this equipment he is ready to repair all ordinary accidents and break-downs on this machinery and implements. He explains how he does it as follows:

On my ranch twenty-eight miles from the nearest town it is not convenient to make a trip for bolts when a hay stacker, or hay rake, or other necessary article is built or repaired, so I carry rods of $\frac{3}{8}$ " and $\frac{1}{2}$ " soft steel with the outfit at haying time. This with a stock of $\frac{3}{8}$ " and $\frac{1}{2}$ " nuts and my tap and die set quickly furnishes the length of bolt necessary. A combination vise with pipe holding jaws is bolted to one of the hay stacker cross pieces in which the rod is held, while a piece the necessary length is cut with a hack saw. Each end is threaded and receives a nut making a very practical bolt. If necessary one end is riveted so as the bolt may be held from turning.

SPRAYER PLUG DESTROYED

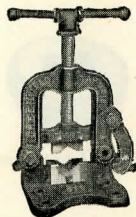
Owner Makes Quick Repair

The replacement plug furnished by local dealer did not fit properly so Mr. Demarest of Warwick, New York, found it necessary to use his pipe dies in repairing his sprayer:

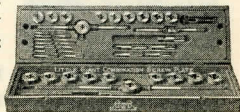
A new plug was required for a place in our sprayer. One purchased from a local dealer was too big. Something wasn't standard. We removed the pipe guide from the pipe dies of the right size and were able to cut the plug smaller with the aid of an ordinary wrench. Saved much delay.



GTD
LINCOLN
Twist Drill
For Bit Brace



GTD Pipe Vise

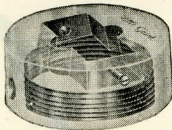


GTD "Little Giant"
Combination Screw Plate

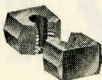
HOW I FIXED IT

GTD

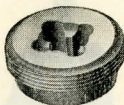
NEW TONGUE FOR COTTON PLANTER



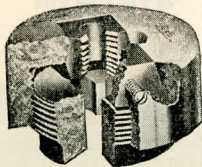
GTD "Little Giant"
Die Cap



GTD "Little Giant"
Die



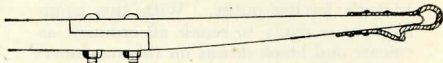
GTD "Little Giant"
Die Guide



GTD "Little Giant"
Cap, Die and Guide
Assembled

Repair Bolts Made From Scrap Iron
Mr. Cleon B. Warren living on Route 5
Waco, Texas, made a new cotton planter
tongue as follows:

The tongue of a cotton planter was broken. By taking another piece of a tongue and splicing together as per illustration



the tongue was made as stout as a new one would have been—by the use of two $\frac{1}{16}$ " bolts. The bolts were cut out from longer carriage bolts that were found in the scrap iron. Hacksaw, vise, and $\frac{1}{16}$ " stock and die were used.

NEW HITCH HOOK FOR SPIKE-TOOTH HARROW

Spring Harrowing Held Up for Only
a Few Minutes

The second section of Mr. C. B. Warren's (Waco, Texas) harrow was worthless until he made a new hitch hook to replace the one he had broken. He tells how he fixed it.

This Spring the hitch broke that works on the two section spike tooth harrow. It was a $\frac{1}{2}$ " bolt with a hook on the end to fasten into an eye on the harrow. With a farm forge we bent the hook on a piece of $\frac{1}{2}$ " iron. After the bolt was bent the threads were run on it with a die from our screw-plate. The nut was used from the old bolt.

INSTALLS AUTO DASH LIGHT

Farmer's Reamer Enlarges Drilled Hole

How often each of us has wanted to drill a hole of a certain size only to find that the largest of our drills is too small. Mr. Dreyer, Palatine, Illinois, under these circumstances goes ahead and drills the hole anyway and

HOW I FIXED IT



then enlarges it to size by running in his No. 6 Repairman's Taper Reamer. He tells of one job which he handled in this way.

I wanted to put a dash light on my car, and I started the hole with a drill and made it larger with a No. 6 reamer.

MONTANA FARMER REPAIRS BOILER

Mr. John M. Sassen of Glasgow, Makes
New Water Connection

Mr. Sassen's pipe taps and dies and other repair tools have paid for themselves many times over on jobs such as this one which he was able to do on the spot. Because he has suitable tools handy he is able to make permanent repairs.

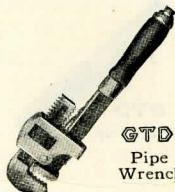
I broke out a $\frac{3}{4}$ " pipe which is screwed into the boiler to put water in. Got it out thus: I made a cold chisel round and slanting. I held it close to the boiler so I could force the broken part through. As soon as I had it loose enough I took it out, took a $\frac{3}{4}$ " tap screwed it into the hole to make good threads and then I used my die again and made a new piece of $\frac{3}{4}$ " pipe 4" long and screwed that again into the hole in the boiler making it just as good as new. I used this boiler for a long time after that.

SEPARATOR FASTENED TO CONCRETE BASE

Bolts Embedded in Milk-Room Floor

Mr. Cleon B. Warren of Waco, Texas, has a suggestion which may be applied when anything is to be placed on a concrete floor, wall or ceiling.

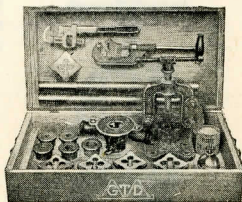
When we ran a concrete floor in our milk room we took four pieces of $\frac{3}{8}$ " iron 4" long. Cut threads on one end and bent a hook on the other. These were placed in the exact place the holes were in the base of the separator. When the floor had set the separator was fastened down with the nuts. The iron was bent cold.



GTD
Pipe
Wrench



GTD
3 Wheel
Pipe
Cutter



Assortment A
GTD Pipe Tool Set

HOW I FIXED IT



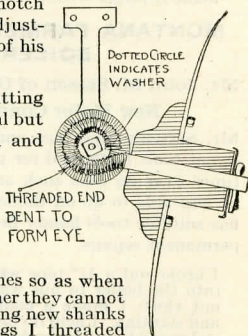
MAKES NOTCHED SHANKS FOR DISC BEARINGS

Nebraska Farmer's Die Stock Put to Novel Use

With the help of his die stock Mr. George G. McVicker of North Bend, Nebraska, was able to notch quickly the adjustable disc shanks of his corn cultivator.

Using a die for cutting notches is unusual but a very good idea and Mr. McVicker's work was entirely satisfactory.

The adjusting pivot on my disc corn cultivator has notches so as when clamped together they cannot slip. In making new shanks for the bearings I threaded the end of the shank before heating to bend the eye and after bent they corresponded to the notches sufficiently to make a good locking joint.



GTD
Hand Tap



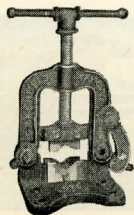
GTD
Burring Reamer

NEW THRESHING MACHINE BURNS OUT BEARINGS

Quick Repair Remedies Trouble

This letter from Mr. W. E. Campbell of Murdock, Illinois, describes how one of his threshermen prevented a tight bearing on a new machine from melting out.

Last year my thresherman with a new machine was having trouble with his cylinder bearings melting out, from insufficient lubrication. It took only a few minutes to bore a hole in the cap of the bearing, tap threads in it and screw in an extra grease cup, thus removing the cause of the trouble. If the screw plate hadn't been handy this job would have required a trip to town taking thirty minutes to an hour with several hundred acres of grain waiting to be threshed and twenty-six men standing idle.



GTD Pipe Vise

HOW I FIXED IT



TRACTOR BULL GEAR STRIPS THREADS

Reamed in Place by Power

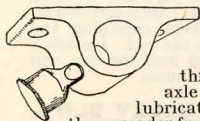
Reaming several holes from 1" to 1 1/2" is no easy job, thought Mr. Robert E. Coyne owner of "The Coyne Acres" at Ethan, South Dakota. So he rigged up a device to do the work by power, without removing the gear from the machine. This is how he tells about it.

The stud bolts in the large bull gear on our 30-60—Tractor became loose and finally stripped the threads and had to be reamed out from one inch to inch and a half and rethreaded for larger bolts. A pulley was mounted on one end of a shaft and a piece of gas pipe fastened on the other end, and squared to take the square end of the reamer. A small gas engine was belted to this shaft to turn it, a slight pressure was applied to the end of the shaft with a block of wood and the hole was soon reamed out to our entire satisfaction, without removing the gear.

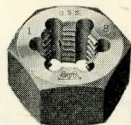
OIL HOLES INACCESSIBLE

Farmer Fits Grease Cups

Oil holes are frequently placed in hard-to-get-at places. Mr. Clark P. Schaller, Route No. 4, Troy, New York, found them so on his manure spreader and fitted grease cups instead. Now he can lubricate the bearings without any trouble.



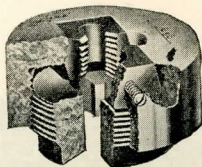
On a Kemp & Burpee manure-spreader, the rear axle journals, through which the axle passes, could not be lubricated properly because the spreader frame is directly over the hole left for oiling. I overcame the difficulty by drilling two holes with an 1 1/2" twist drill, then tapping with a 1/8" pipe tap as shown in drawing, then screwed in two grease cups and lubrication is now positive.



GTD "Hex" Die
For Re-Threading

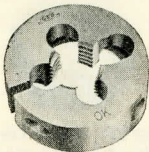
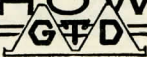


GTD
Repairman's
Taper Reamer



GTD "Little Giant"
Die, Guide and Collet

HOW I FIXED IT



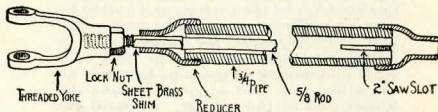
GTD "OK"
Drop-Forged Die

STIFFENING THE DRAG LINK ON MY TRUCK

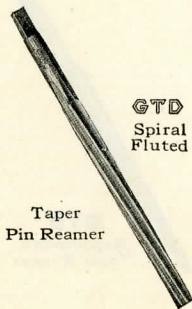
By George G. McVicker, North Bend,
Nebraska

A very neat and ingenious job was performed by this Nebraska farmer in reinforcing the drag link in the steering mechanism of his truck.

Mr. McVicker's directions, which follow, could be used to strengthen almost any weak rod.



GTD
Spiral
Fluted



Taper
Pin Reamer

After having an accident happen to my truck and believing it to have been due to a weak connecting rod from bell crank to steering knuckle, I used the scheme as here shown to stiffen it. One end has a forged yoke while the other end has a yoke screwed on. The rod is $\frac{5}{8}$ " round and over it I placed a piece of $\frac{3}{4}$ " pipe on which I cut 1" of threads at each end. After threading I slotted the ends of pipe on two sides with a hack saw in for two inches from ends. Securing two reducing couplings reducing from $\frac{3}{4}$ " to $\frac{1}{2}$ " I placed on over the rod then wrapped the rod with sheet brass for three inches where the end of pipe was to rest to make a snug fit for the pipe. Placing on the pipe and treating the other end likewise, I then screwed on the reducing couplings clamping the ends of pipe tight to the rod. I made a clean, solid job of it and the rod will probably not buckle again.



GTD "Hex" Die Set
For Re-Threading

SEPARATOR PULLEY SLIPS

Work Delayed Only A Few Minutes

W. E. Campbell, Murdock, Illinois believes not only in keeping repair tools but also in having them handy for emergencies. Here is an incident that proves the value of having

HOW I FIXED IT



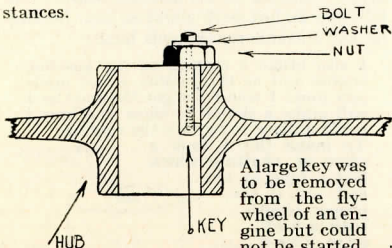
your repair tools where they may be reached in a hurry. Only a few minutes were wasted on this job.

Two years ago while threshing here, a pulley on the separator turned on its shaft and it was found that the set screw holding it to the shaft had stripped its threads. My tools were handy and in a few minutes we had tapped the hole out and put in a larger set-screw. If the screw-plate hadn't been handy this job would have required a trip to town taking thirty minutes to an hour with several hundred acres of grain waiting to be threshed and twenty-six men idle.

HOW TO REMOVE "FROZEN" FLYWHEEL KEY

By Arthur A. Haskell, Conde, South Dakota

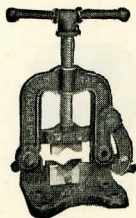
Mr. Haskell has worked out a novel idea here and it is offered so that other farmers may benefit by it under similar circumstances.



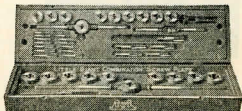
A large key was to be removed from the fly-wheel of an engine but could not be started, so I drilled a $\frac{3}{8}$ " hole through the key and tapped in threads and with a sort of bridge and bolt pulled the key. The outfit looked something like this: (See illustration.) The bridge used was a large nut with a washer on top, heavy enough so that when the bolt was turned it did not pull through the washer but instead, pulled out the key. The tools used were a chain drill and taps from a "Little Giant" screw-plate.



GTD
LINCOLN
Twist Drill
For Bit Brace



GTD Pipe Vise

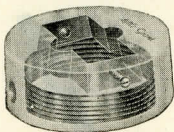


GTD "Little Giant"
Combination Screw Plate

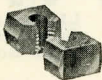
HOW I FIXED IT



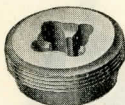
CRYSTALLIZED BOLT ALLOWS TRACTOR FUEL TANK TO LOOSEN



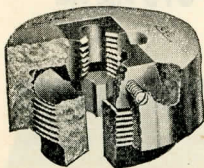
GTD "Little Giant"
Die Cap



GTD "Little Giant"
Die



GTD "Little Giant"
Die Guide



GTD "Little Giant"
Cap, Die and Guide
Assembled

Missouri Farmer Makes Own Repair

The proprietor of Westogle Stock Farm, Mr. Wm. B. Fullerton of Belton, Missouri, relates an incident in which his screw-plate played the leading part:

The fuel tank on my tractor rests in a bracket that is bolted on a water manifold pipe with a U bolt. From the vibration of the engine this bolt crystallized off at the nut. I had no U bolts in stock, so took a straight bar of round iron $\frac{3}{8}$ " and ran a thread on each end, then heated in the forge and bent the rod to a U of the right size and the new bolt was ready.

ENGINE MANUFACTURER OUT OF BUSINESS

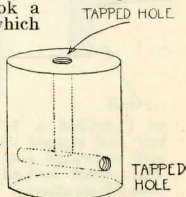
Iowa Farmer Repairs Own Casting

Mr. Valentine Schmitz, Raymond, Iowa, broke a casting on his gasoline engine. He tells how he lost only about an hour because he had suitable repair tools handy.

I also broke a casting on my gasoline engine and as this engine is not made any more I could not get the part so I will make a sketch to show you how I made a piece to replace the casting.

To make this I took a piece of shafting which had a hole at one end, cut it the proper length with a hack saw then drilled a hole in the center after which I threaded them and had the engine going in about an hour.

I have used this set for very many purposes which if I would not have had it would have cost me as much or more to have done as the set cost.



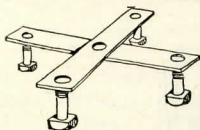
HOW I FIXED IT



HOME MADE GRID-IRON

Good Suggestion Sent in by
Mr. Demarest

Here is an ingenious plan for making a grid and the only things needed are a couple of pieces of scrap iron and five bolts. The tools used are a drill and a tap. This Warwick, New York, farmer made a four legged stand or grid. You can make as many legs as you want to without much extra work:



To make an iron stand to support a barrel or to cook on, take two flat 1" bars and bolt in the middle. Drill holes near the end and tap for bolts of middle length. This stand will do to fold and cook on, in camping, if irons of unequal length are used as indicated. Bolts may be unscrewed each time, if desired.

PIPES WATER TO ENSILAGE CUTTER

Saves Hundred Yard Haul

On the Warren Farm, R. F. D. No. 5, Waco, Texas, the team was used to draw water up to the silo. Mr. Cleon B. Warren writes that the pipe tools owned on the farm enabled them to pipe water direct to the ensilage cutter thus avoiding the carting. He says:

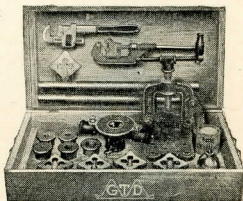
The main line of pipe from the water tank ran within ten feet of the silo. For two years we ran water into a water tank and pulled it up to the silo with a team. This haul was about one hundred yards. When we got our stock and dies we cut out a piece of the pipe and threaded both ends. Then connected back with union, having placed in a Tee and short piece of pipe to take the place of the one that was taken out. This was done where the pipe line came nearest to the silo. With a short piece of rubber hose, water could be supplied to the ensilage cutter as it was needed.



GTD
Pipe
Wrench



GTD
3 Wheel
Pipe
Cutter



Assortment A
GTD Pipe Tool Set

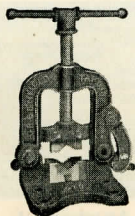
HOW I FIXED IT



GTD
Hand Tap



GTD
Burring Reamer

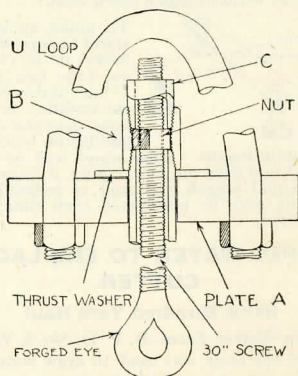


GTD Pipe Vise

HOW I MADE A TURNBUCKLE TO STRAIGHTEN MY SILO

By George G. McVicker, North Bend,
Nebraska

Everybody knows that if repairs are made quickly when accidents occur, they do not develop such serious consequences as when they are allowed to take their own course.



Most of us would think the straightening of a silo too big a job to tackle single handed, but this Nebraska farmer thought of a device which he could easily make in his farm work-shop and with which he could readily handle his silo.

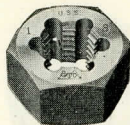
Farmers will find a suggestion here which they can apply in many ways.

On allowing my silo to become dry last summer preceding a heavy wind I found one day that it had been blown far out of plumb and to pull it and hold it to proper position I made three turnbuckles as shown in cut which I attached to $\frac{3}{8}$ " twisted wire cable and pulled the silo into place. To make a turnbuckle

HOW I FIXED IT



without a left hand thread and one that I could operate fast I used a piece of $\frac{3}{4}$ " pipe 4" long, with a coupling on the end as at (B) and drilled a hole through the plate (A) so as the pipe would pass through but not the coupling. I also fitted a washer tightly on the pipe to take the thrust on the plate. I cut the corners from a $\frac{5}{8}$ " hexagon nut and drove it tightly into the coupling and screwed another $\frac{3}{4}$ " nipple on top of it as at (C). A $\frac{5}{8}$ " rod was threaded for 30 inches and an eye made on one end for attaching cable. Another $\frac{1}{2}$ " rod 60 inches long was threaded at each end then formed into a U and attached to bar as in illustration. The nut for taking up the pull was turned by means of a pipe wrench on the 4" length of pipe, thus not necessitating a swivel or a left hand thread.



GTD "Hex" Die
For Re-Threading

KITCHEN PUMP FROZE, YEAR AFTER YEAR

Ohio Farmer's Plan Melts Ice

How many farm pumps can withstand a real cold spell, do you suppose? We all know of some that can't. Now, comes Mr. H. T. Potter of Leonardsburg with a plan that worked fine in his pump and probably will in yours. When the next freeze comes, get out your set of pipe stocks and dies and thaw the ice. Don't wait for Spring as Mr. Potter used to do.

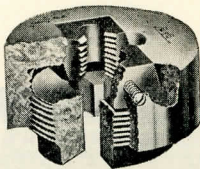
He writes:

A pitcher pump in the kitchen was allowed to freeze up. This had happened a number of times before and, owing to the inaccessibility of the pipe, it was always necessary to wait until the ground thawed in the Spring.

This time the pump top was removed pieces of $\frac{3}{8}$ " pipe cut in short lengths, threaded in order that they could be handled under the ceiling and placed down into the pump pipe, screwing them together until the ice was reached. Hot water passed into the $\frac{3}{8}$ " pipe, was carried down the pipe directly on to the ice and flowed up and out the tap of pump pipe. Domestic tranquility was soon restored.

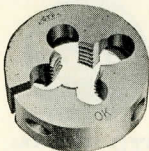


GTD
Repairman's
Taper Reamer

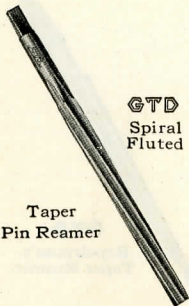


GTD "Little Giant"
Die, Guide and Collet

HOW I FIXED IT



GTD "OK"
Drop-Forged Die



Taper
Pin Reamer



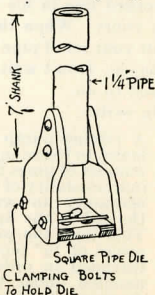
GTD "Hex" Die Set
For Re-Threading

PIPE THREAD STRIPS IN SIX FOOT WELL

Nebraska Farmer's Ingenuity Saves Half Day

There's a mighty good lesson in this letter from Mr. George G. McVicker of North Bend, Nebraska and one that we can all profit by. It is to spend a few minutes in planning the best way to do a job before we tackle it. If Mr. McVicker had gone right ahead and pulled the entire well pipe and joint he would have wasted at least half a day. Maybe more. Instead he thought of a device that he could make quickly to thread the pipe at the bottom of his well pit and so was able to do the whole job in an hour.

All of our wells here on the Platte Valley are of the driven pipe type with the cylinder about six feet below the surface in a pit. The pit is quite often as mine is, of cement walls and the pipe driven close to one side to make room to operate the pipe wrenches when removing cylinder for new valves. On attempting to replace the pump head and cylinder after the yearly repairs had been replaced this spring, the threads were stripped from the end of pipe at the bottom of the pit. It looked as though the entire pipe and joint would need to be pulled to re-thread the end but on meditation I devised the tool as here shown to hold my $1\frac{1}{4}$ " pipe die and the job was completed in an hour, saving a full half-day's time. A piece of $1\frac{1}{4}$ " pipe was used for the extension stock and while held at the top to guide the die the pipe and die were turned with an 18" pipe wrench to renew the threads.



HOW I FIXED IT



EASTER FREEZE CRACKS TRACTOR CYLINDER HEAD

Repairman Brazes It, But Motor Won't
Start. Stock Farm Owner
Fixes It Himself

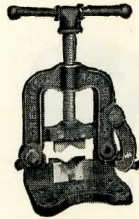
Just as Mr. Wm. B. Fullerton, Belton, Missouri ran out of feed he had the misfortune to crack a cylinder-head on the tractor used to run his feed grinder.

The repair man who brazed the head did not finish the job and Mr. Fullerton had to resort to his own ingenuity, or delay his feed grinding two days which of course he could not do. Read how he solved this problem:

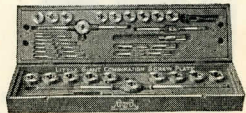
An Easter freeze caught my tractor this spring and cracked a head. I took the head to be brazed. The job looked all right when I went after it, but to my dismay when I tried to start the engine it would not go. There is an oil cock under the cylinder head so that it can be drained if flooded with oil or gas. When I opened this cock a steady stream of water came out of the cylinder. I took the head off and discovered a small crack inside of this drain hole which let the water in the cylinder chamber. I was in great need of the tractor to grind feed for our cattle as we were just out. To go back to Kansas City to have the brazer fix it meant a couple of days delay. Anything to fix it for the time being was my idea right then. I conceived the idea of tapping out the hole from the inside and putting a screw head plug in the hole to keep the water out of the cylinder. This of course cut off the chance of draining the oil. I did not have a $\frac{1}{4}$ " pipe thread tap, but the town plumber was good enough to let me have his. The position of the hole made it an awkward job as I had to use a small bicycle wrench to turn the tap. The job was a success however, and we ground our feed that day.



GTD
LINCOLN
Twist Drill
For Bit Brace

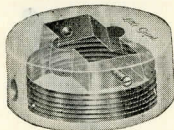


GTD Pipe Vise

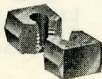


GTD "Little Giant"
Combination Screw Plate

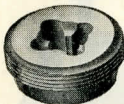
HOW I FIXED IT



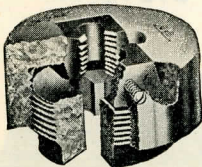
GTD "Little Giant"
Die Cap



GTD "Little Giant"
Die



GTD "Little Giant"
Die Guide



GTD "Little Giant"
Cap, Die and Guide
Assembled

"REPAIRMAN'S" REAMER HANDY

Cleans Out Old Threads for New Bolt
Mr. Ben Dreyer, Palatine, Illinois, finds No. 6 Taper Reamer useful in many ways. This tool can be used for enlarging holes in any material and is especially useful for lining up holes that do not quite match so that a screw or pin can be inserted:

The other day I used the No. 6 Repairman's Taper Reamer to smooth a hole in my gasoline engine, the threads of which had been worn. After the hole was reamed I used a tap to make new threads, and then inserted a new bolt of a little larger size.

TOO ROUGH TO HOLD WATER

Wash Tank Outlets Won't Take
Stoppers

Mr. Roscoe E. Hay of Overbrook, Kansas had trouble making his wash tank drains take their rubber stoppers. His pipe reamer remedied this trouble as he tells:

The outlets to our cement wash tanks were rather rough, the castings having no taper. This made it difficult to put the rubber stoppers in place. Finally the pipe burring reamer was thought of. A few turns of the brace holding that tool and the job was done. The result was a smooth tapered outlet that caused no more trouble.

MAKES FARM GRINDER SHAFT

J. L. Justice, Logansport, Indiana
Uses Pipe

By using his bolt dies to thread the outside of a piece of pipe this Indiana farmer was able to make a quick repair on his grinder.

In repairing an elevator on a small farm grinder it was necessary to use a piece of

HOW I FIXED IT



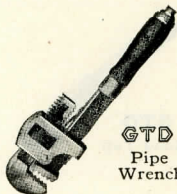
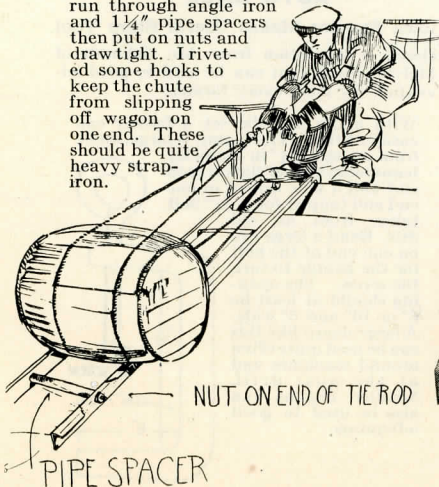
half-inch pipe for a shafting. A narrow pulley had to go on the end of the shaft, so we simply cut the threads on the pipe with a die and used two lock nuts to hold the pulley in place on the shaft. Could you think of anything simpler!

MAKES CHUTE FOR UNLOADING BARRELS

Scrap Pile Furnishes Material

Here's a good one from Mr. Albert Schmidt, Melvin, Iowa. (We might add that the same apparatus is just as good for loading. If used with ropes arranged as shown heavy barrels can be loaded or unloaded with ease and safety.—Editor.)

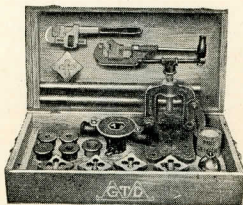
The two long pieces are about six foot long angle iron taken from an old wrecked steel wind mill. These two are held together by two 1 1/4" bars about 18" to 20" in length taken from an old harrow and threaded on both ends, then run through angle iron and 1 1/4" pipe spacers then put on nuts and draw tight. I riveted some hooks to keep the chute from slipping off wagon on one end. These should be quite heavy strap-iron.



GTD
Pipe
Wrench



GTD
3 Wheel
Pipe
Cutter



Assortment A
GTD Pipe Tool Set

HOW I FIXED IT

GTD

DISC HARROW NUT TIGHTLY SECURED

Waco, Texan Cures Trouble

With a die from his screw plate Mr. C. B. Warren cleaned up the battered thread on the disc rod of his harrow. This allowed him to use a lock nut to secure the discs together. This trouble of Mr. Warren's will interest disc harrow owners:

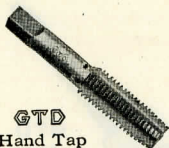
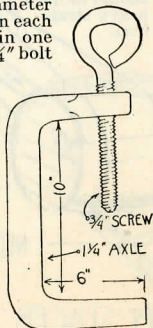
The nut that holds the discs together in a disc harrow kept coming loose until the threads had become battered so that it could not be tightened. Instead of putting some washers on the rod the rod was taken out and the threads were cleaned out with the $\frac{3}{4}$ " die and replaced. Another $\frac{3}{4}$ " nut was found and placed on as a lock nut. We have had no more trouble.

SCREW CLAMP FROM AUTO AXLE

Iowa Farmer Makes Useful Shop Tool

Here's a suggestion from Mr. Schmidt of Melvin, Iowa, that can be used to good advantage by most every farmer:

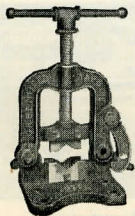
With a tap and die set a farmer can easily do this. This clamp is large, made from an axle $1\frac{1}{4}$ " in diameter hammered kind of flat on each end and a hole drilled in one end and tapped for a $\frac{3}{4}$ " bolt taken from an old disc. Bend a large eye on one end of the bolt for the handle to turn the screw. The opening should at least be 8" or 10" and 6" wide. A large clamp like this can be used quite often around machines and at the post drill. Smaller clamps can also be used to good advantage.



GTD
Hand Tap



GTD
Burring Reamer



GTD Pipe Vise

HOW I FIXED IT



SOUTH DAKOTA RANCH OWNER STRIPS THREAD ON TRUCK AXLE

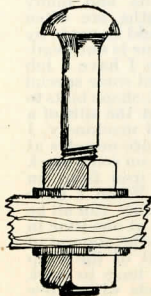
Mr. George G. McVicker Makes Quick Repair.

We do not recommend dies as substitutes for nuts, but when in an emergency a die will answer the purpose, it would be foolish not to use it and take a chance on having to replace it. Of course if the die was injured in any way it should be replaced immediately so as to keep the set complete. Mr. McVicker describes his experience in this way:

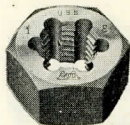
On my ranch twenty-eight miles from Winner, the end of the railroad in South Dakota, I had the misfortune of stripping the threads from axle end holding rear wheel on my truck. The end of axle shaft is square tapering and unless held snug soon would ruin hub and axle end. I screwed on a $\frac{3}{4}$ " pipe die with an 18" pipe wrench and let it act as a nut until I reached the shop the following week where I had a new nut fitted.

MAKES DOUBLE-HEADED BOLT

Good Suggestion From Mr. Demarest This Warwick, New York Farmer required a special type of bolt. He wanted it to project a certain distance from the piece to which it was fastened. Read how he put the new bolt head where he wanted it.



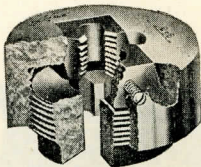
We wish to use a bolt in a piece of wood so that it will project up in place. By means of our dies we cut a long thread on the bolt and secure it in place with two nuts as indicated. The original thread was too short.



GTD "Hex" Die
For Re-Threading

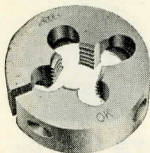


GTD
Repairman's
Taper Reamer

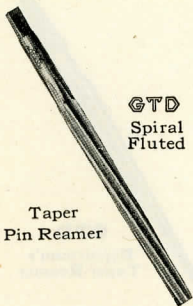


GTD "Little Giant"
Die, Guide and Collet

HOW I FIXED IT



GTD "OK"
Drop-Forged Die



GTD
Spiral
Fluted

Taper
Pin Reamer



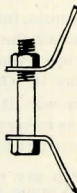
GTD "Hex" Die Set
For Re-Threading

CLAMPS WITH POSITIVE LOCK

Strap Iron Makes Good Barrel Hoop

Read how Mr. Demarest of Warwick, New York, makes hoops that can be adjusted as tight as necessary or used as clamps to hold together broken parts, etc.

To clamp a circular or rectangular receptacle together, strap iron may be used the ends of which are bent up as shown and drilled to take a machine bolt of the right size: one hole being larger than the bolt diameter, the other smaller so that it may be tapped to take the bolt threads. When the bolt is screwed up as tight as possible and the bolt nut screwed tightly in turn, we have a fit that is not likely to work loose in use. The bolt is locked in place.



SCRAP PILE A SOURCE OF PROFIT FOR MR. FULLERTON

Makes Odd Shaped Bolts in Spare Time

A Belton, Missouri farmer, Mr. Wm. B. Fullerton, suggests how his tools help him to save money. This is only one of many jobs in which Mr. Fullerton has found his tools indispensable:

I-bolts, hook-shaped bolts and many special shapes and lengths are often needed on a farm and would be made by the local blacksmith if time is not available on the farm. When I have a job ahead of me that will need some special bolts as for instance long L shape bolts to imbed in concrete to hold the sills of a building or some piece of machinery, I can usually find a few spare minutes at a time to run the threads on some stock iron or pieces of round iron from an old discarded machine. When I have enough bolts threaded they can all be bent to the desired shape at one time in the forge. It is surprising the amount of use a farmer can get out of the scrap iron pile if he has a few tools to work with. I-bolts can be made with a few

HOW I FIXED IT



links of chain on them. The bolts can be made to go through a gate and the chain long enough to go over a bolt driven in the gate post, and you have a lock on the gate that will not be picked by roguish stock.

BLOW HOLE CAUSES LEAK

Flaw In Casting Mended

Iron castings occasionally develop defects which though small in themselves, utterly destroy the use of the object of which they are a part.

The water jacket of a gasoline engine or an iron kettle for instance would be worthless if even a small hole broke through.

Mr. H. P. Demarest of Warwick, N. Y., had this experience, and fixed it. He tells you how:

A small blow hole developed in an iron receptacle on the place. By drilling out and tapping for a pipe plug the defect was fixed into workable condition.

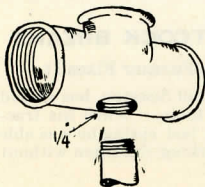


GTD
LINCOLN
Twist Drill
For Bit Brace

VALVE LIFTERS FOR SPRAYER

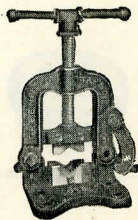
Farmer Makes Cross From Tee

Here is a job performed by Mr. Demarest, Orange County, N. Y. fruit grower, which can be adapted to meet a good many conditions:

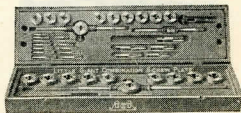


We wished to fix a set of valve lifters on our old sprayer the other day. To do this required that a 1" pipe tee be tapped to take a $\frac{1}{4}$ " fitting underneath the outfit making a sort of cross type fitting.

We'd have used a cross of this kind if it had been available. It was not, but tees were and we soon made the fitting required, by drilling and tapping same as shown.



GTD Pipe Vise



GTD "Little Giant"
Combination Screw Plate

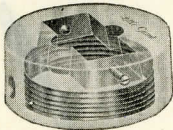
HOW I FIXED IT

GTD

FITTING NUTS SNUGLY

Indiana Farmer Suggests Method

"Essential to have tight fitting nuts" says Mr. J. L. Justice of Logansport.

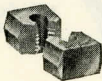


GTD "Little Giant"
Die Cap

When cleaning or sharpening threads on bolts with a die, I find the use of the die reduces the threads slightly and the original nut will not fit on so snugly. So I take a nut one size smaller, and with the same size tap ream out the threads or clean them rather and when this nut is put on the threads of the bolt a snug fit is obtained. This is an essential operation where a loose nut would soon shake off.

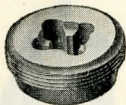
FROST BURSTS BATH TUB PIPE

Texas Farmer Makes Repair Without Removing Pipe



GTD "Little Giant"
Die

Difficult repair job easily completed by Mr. Cleon B. Warren, R. F. D. No. 5 Waco, who keeps fine assortment of repair tools handy. Mr. Warren goes on to say:



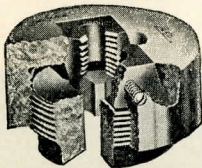
GTD "Little Giant"
Die Guide

Last winter the cold weather broke the water pipe that comes into the bath tub, above the floor. We disconnected the bath tub and with pipe cutters cut the $\frac{3}{4}$ " pipe below the break. With a ratchet stock and die we were able to run threads down on the pipe without taking it out through the floor. Then with a connection and a piece of pipe cut and threaded the right length (same as the piece that was taken out) the bath tub was replaced.

TRACTOR PETCOCK BREAKS

South Dakota Farmer Fixes It

Mr. W. P. Wohlheter of Sisseton, has a good assortment of repair tools. When his tractor had an accident last spring he was able to put it back in working condition without much of any delay:



GTD "Little Giant"
Cap, Die and Guide
Assembled

I had a job in particular this spring on the tractor, the valve for letting water out of the radiator became rusted and broke off. It was impossible for me to

HOW I FIXED IT



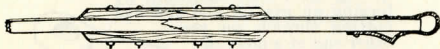
get the balance of petcock out of casting on engine without using a reamer and in doing so I injured the threads so another petcock could not be screwed in. I continued reaming out the hole and cut new threads putting in a pipe reducer then the new petcock.

TEXAN REPAIRS DRILL TONGUE

Oats Planter Fixed in the Field

Hack saw blades all broken, Mr. C. B. Warren cuts longer threads on bolts with his screw-plate.

Last fall while I was drilling oats I broke the drill tongue. I took two pieces of



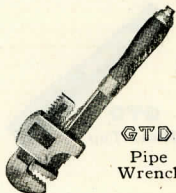
two by four about four feet long and a brace and bit and four $\frac{7}{16}$ " bolts and fixed it in the field. The bolts were about three inches too long. The two by four pieces were placed on the bottom and top of the broken place in the tongue. The holes were bored through both pieces and the tongue. I ran the threads down below where the nut would go. This was lots of work but all the blades had been broken in the hack saw. The nuts were placed under the tongue to keep from injuring the teams.

BREAKS EMERGENCY BRAKE ROD

South Dakota Farmer Makes own Repair

Everyone who drives a car realizes that it is necessary to keep the brakes in good condition. Mr. W. P. Wohlheter of Sisseton, broke his emergency brake rod but was able to repair it so that he could use the car. Read how he did it:

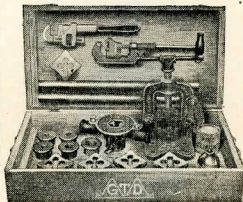
I broke the rod leading from the emergency brake on my Buick, near the turn-buckle. By cutting threads down further and lengthening on other end, I was able to use car until I could get rod welded.



GTD
Pipe
Wrench

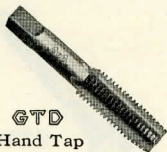


GTD
3 Wheel
Pipe
Cutter



Assortment A
GTD Pipe Tool Set

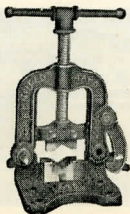
HOW I FIXED IT



GTD
Hand Tap



GTD
Burring Reamer



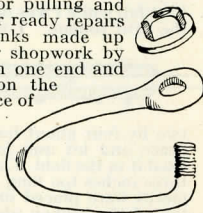
GTD Pipe Vise

ONE-PIECE CHAIN REPAIR LINK

Emergency Links Made in Spare Time

The accompanying illustration shows how Mr. George G. McVicker of North Bend, Nebraska makes emergency chain repair links. These links are easy to make and can be quickly fitted to mend broken chains or to combine short lengths of chain into one long chain.

In using my tractor for odd jobs about the farm I very often kink the chain in use for hitching or pulling and break a link. For ready repairs I have several links made up during the winter shopwork by forging an eye on one end and cutting threads on the other end of a piece of round stock and forming it as cut shows. By substituting for the broken link, closing with a hammer and screwing on the nut a serviceable repair is made.



ENGINE STUD TWISTS OFF

Up-To-Date Farmer Doesn't Have to Call Mechanic for Small Job

Mr. W. E. Campbell of Murdock, Illinois, like so many modern farmers makes minor repairs and adjustments on his automobile and tractor. He has a good assortment of high grade tools and finds that they have paid for themselves a good many times over.

Here is a small job which would have been a costly one if Mr. Campbell had not had his repair tools handy:

In removing the water manifold from an engine I twisted off a stud bolt. Without tools I would have been required to bring a mechanic from town at considerable cost for so small a job. With my own tools I bored out the old piece, re-threaded the hole and made a new stud.

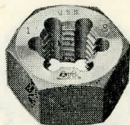
HOW I FIXED IT



ENGINE STUDS BROKEN

Logansport Farmer Makes New Ones
Indiana man, Mr. J. L. Justice, is able to put his car in order because he has taps and dies handy. He writes:

When repairing our car, some of the stud bolts which hold the valve plate on the engine were broken off. New bolts were made from an old wagon rod that was found in the shop, cut to the proper length and threads run on with a die. The factory was three hundred miles away and the car had to be in service that evening.



GTD "Hex" Die
For Re-Threading

BOXED-IN WATER SHUT-OFF PREVENTS FREEZING PIPES

Affords Protection From Texas Weather
Cleon B. Warren of Waco, Texas, sends in a suggestion that any mild climate farmer can use.

After having much trouble with the pipe that supplies water to the horse trough freezing we made the following. The trough was made out of concrete and on top of the ground. The water was lead in through the bottom. A cut off was put in the pipe, about ten feet from the trough. A good box was built around the cut-off. It will be seen that all the pipe is under the ground. This is all the protection that is needed in the South.



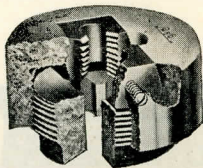
GTD
Repairman's
Taper Reamer

MAKES PLOW BOLT WHILE HIRED MAN EATS

Saves Six Mile Trip to Town

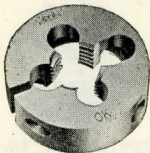
Mr. W. P. Wohlheter, R. F. D. No. 4, Sisseton, South Dakota, prevents loss of hired man's time by making quick repair with his screw-plate. He writes:

The hired man lost a $\frac{5}{8}$ " by $1\frac{3}{4}$ " carriage bolt out of the plow. I was able to make a bolt this size while he was eating his dinner and lost no time for him, saving me a trip to town of six miles.

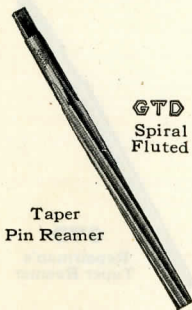


GTD "Little Giant"
Die, Guide and Collet

HOW I FIXED IT



GTD "OK"
Drop-Forged Die



GTD
Spiral
Fluted

Taper
Pin Reamer

REPAIRS GRINDSTONE HANDLE

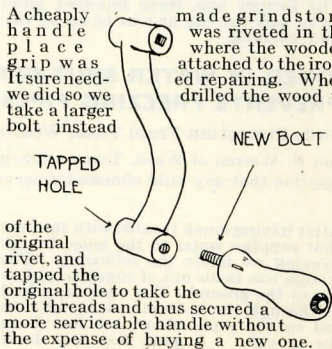
Old Wood Handle Made Strong As New

Who wants to twirl a grindstone anyway? None of us more than we have to. But when the handle is loose it makes the job twice as annoying as usual.

Mr. Demarest, Warwick, New York, repaired the handle on his grindstone so that it is stronger than ever. Here's how he did it.

A cheaply
handle
place
grip was
It sure need-
we did so we
take a larger
bolt instead

made grindstone
was riveted in the
where the wooden
attached to the iron.
ed repairing. When
drilled the wood to



of the
original
rivet, and
tapped the
original hole to take the
bolt threads and thus secured a
more serviceable handle without
the expense of buying a new one.

IMPLEMENT FRAME REPAIRED

Nuts Prevented From Working Loose

You have often seen repairs made by bolting plates on opposite sides of the broken part. This job done by Mr. H. P. Demarest of Warwick, New York, goes one step further and provides a locking device:

In repairing broken implement frame, fit plates on either side. Drill and tap one outer plate so that when nut is fitted to bolt, this nut will act as a lock to prevent it from working loose easily.



GTD "Hex" Die Set
For Re-Threading

HOW I FIXED IT



HAY LOADER CASTING BREAKS

"I Can Fix It" Says Neighbor

Mr. C. W. Haines of Mendon, Illinois, has a good equipment of repair tools and is able to help out his neighbors when they have mechanical troubles.

He tells of a simple repair job that saved one of his neighbors the price of a new hay loader:

A neighbor has a hay loader in working order but out of date 20 miles from an agent. A casting broke, and he came and consulted me. "Fetch it over I can fix it," said I. I tagged up a patch, drilled some holes, tapped holes in the casting, took some square headed bolts, cut them to the right length, threaded them and screwed on the patch. He said "you have just saved me a new loader as I didn't know what to do."

HOW TO MAKE A BOLT

By C. L. H. Vagts, George, Iowa

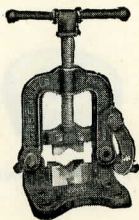
It often happens that a certain size bolt is needed in a hurry. This suggestion from Mr. Vagts tells how a bolt of any size or length can be made quickly from ordinary iron rod.

The only tools needed are a hack-saw, vise and screw-plate. Mr. Vagts says:

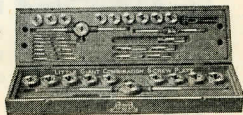
If you break a bolt you can take a rod of the same size that yours has to be, cut it to the proper length and cut a thread in the end far enough to let a burr (nut) go on. Screw on the burr (nut) rivet it and you got the head on. Then thread the other end and you got your needed bolt. I always keep rods from $\frac{1}{4}$ " up to $\frac{3}{4}$ " on hand and I have made countless bolts in above described manner and used them to my entire satisfaction. This one use has paid for my whole set of taps and dies. A farmer cannot keep all the different size bolts on hand.



GTD
LINCOLN
Twist Drill
For Bit Brace



GTD Pipe Vise



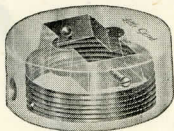
GTD "Little Giant"
Combination Screw Plate

HOW I FIXED IT

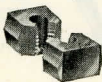


GASOLINE SAVER FOR AUTOMOBILE ENGINE

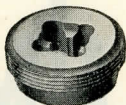
Home Made Device Successful



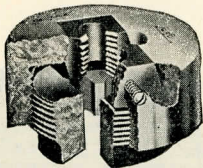
GTD "Little Giant"
Die Cap



GTD "Little Giant"
Die



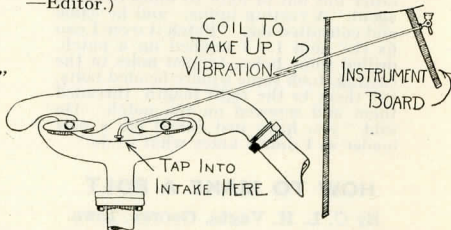
GTD "Little Giant"
Die Guide



GTD "Little Giant"
Cap, Die and Guide
Assembled

A few minutes' work and a few cents spent for pipe fittings and gasoline tubing or ordinary $\frac{1}{8}$ " pipe and you can have as good a gasoline saver as you could buy for several dollars.

Mr. Demarest of Warwick, New York, offers this suggestion. (If arranged as shown in sketch, using a priming cup instead of a pet cock, this device can also be used to prime the motor with gasoline to make it start easily. —Editor.)



To let the air in manifold of auto drill manifold and tap for $\frac{1}{8}$ " pipe. Lead pipe back through the dash and place pet cock on instrument board. After engine starts open up cock as desired and save gas. The same idea saves fuel in operating our tractor.

HOW TO MAKE CONCRETE TROUGH DRAIN

By Mr. Cleon B. Warren, Waco, Texas
Mr. Warren tells how to make a concrete trough with a drain that governs the height of the water, also a good clean-out feature:

A very good drain for a concrete water trough was made by cutting a piece of 2" pipe long enough to reach from the center of the trough to the outside of the forms. Both ends were threaded and on the end that was placed in the center of

HOW I FIXED IT



the trough an L was screwed on. This L was placed flush with where the bottom of the trough was to be. After the trough had been run, a piece of 2" pipe was cut and threaded two inches shorter than the side of the trough. This was screwed in to the L in the floor of the trough. This pipe acts as an overflow and keeps the water from running over the sides. When it is desired to clean the trough the overflow pipe is removed.



GTD
Pipe
Wrench

HOW TO MAKE AN ADJUSTABLE SAW TABLE

By H. P. Demarest, Warwick, New York

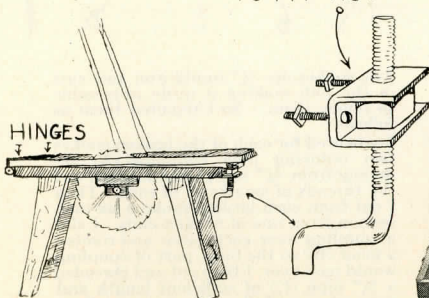
Mr. Demarest had a saw and arbor with the bearings, pulley etc., and wanted to make an adjustable saw table for his workshop.

The legs and frame were easy enough but when it came to the adjustment Mr. Demarest was stumped for a minute. Then he thought of his screw-plate and with it quickly made the adjusting screw. The pictures show how the rod was bent and threaded and the nut was fastened to the frame opposite the hinges

HEAVY STRAP
IRON - BENT
TO FIT NUT



GTD
3 Wheel
Pipe
Cutter



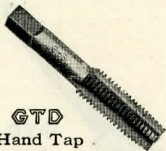
A long screw to raise and lower a home made saw table was made by bending an iron rod and threading as indicated. The nut was fastened in the frame by means of a strap iron clip made as shown.



Assortment A
GTD Pipe Tool Set

HOW I FIXED IT

GTD



GTD
Hand Tap

ENGAGED CLUTCH BREAKS TRACTOR WHEEL SPOKES

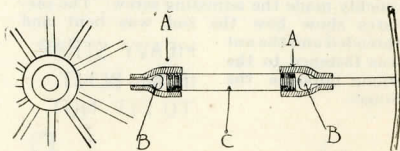
Tractor Backs Into Stump And Breaks
Drive Wheel

"No weakness of the wheel has developed" says Mr. George G. McVicker of North Bend, Nebraska, in describing how he made a permanent repair of this serious damage to his tractor. The following letter from Mr. McVicker tells of a scheme that may be adapted to many kinds of repairs:

While using my tractor to shell corn during the zero weather last winter, the clutch was accidentally engaged and before the tractor was stopped it had backed into a stump and broken four spokes in one of the drive wheels.

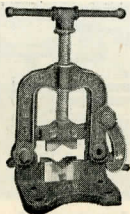


GTD
Burring Reamer



The spokes are $\frac{3}{4}$ " round iron and cast in the hub making it quite impossible to renew them. So I repaired them as follows:

I procured for each of the broken spokes two reducing pipe couplings. (A) reducing from $\frac{3}{4}$ " to $\frac{1}{2}$ " and reamed out the threads of small end of each. Then I cut from each broken spoke a six inch section from one of broken ends. I slid a coupling over each piece and riveted a head (B) so the large part of coupling would pass over. I then cut and threaded a $\frac{3}{4}$ " pipe (C) of sufficient length and screwed one of the reducing couplings on each end. The tension of each broken spoke was drawn to fully its former strain, and no weakness of the wheel has developed after the Spring's farm field work.



GTD Pipe Vise

HOW I FIXED IT



PLOW HANDLE SPACER

New One Made From Scrap

Mr. C. B. Warren, Waco, Texas farmer broke the brace between the handles of his walking plow and tells us how he made a new one with his screw plate:

The long bolt that goes by the spacer between the handles of a walking plow had broken. We did not have another like it. In the scrap pile we found a piece of $\frac{5}{16}$ " iron. After cutting it the right length and threading both ends it worked very well. Used hack saw to cut iron.

HOME MADE CLEATS

Repair For Broken Implement Parts

Mr. Justice, Logansport, Indiana, saves enough on each job to pay for tap:

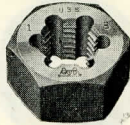
Sometimes when replacing a broken cleat on a farm implement, it is necessary to use a piece of heavy strap iron for the purpose, so instead of going to the blacksmith to have it done we bore the holes with our drills press, and with a tap cut the necessary threads on the strap iron. It's a job that can be done while you are explaining it to the blacksmith and enough is saved to pay for the tap. These cleats can be used until new ones arrive from the factory.

POSTHOLE AUGER HANDLE BREAKS

Kansas Farmer Uses Pipe Fittings

A pipe Tee and a couple of short pieces of pipe, threaded with his pipe stock and die repaired Mr. Roscoe E. Hay's (Overbrook) posthole auger so that it was stronger than new. Mr. Hay writes as follows:

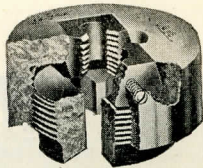
Our posthole auger had the wood handle broken. The repair was made by removing the clamp that held the wood part, by unscrewing. A Tee was put on in its place and in this were screwed two pieces of pipe about nine inches long. This formed a perfect handle that will last as long as the auger.



GTD "Hex" Die
For Re-Threading

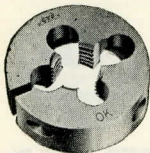


GTD
Repairman's
Taper Reamer

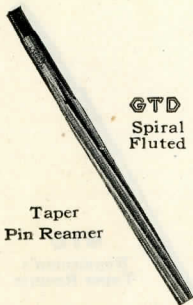


GTD "Little Giant"
Die, Guide and Collet

HOW I FIXED IT



GTD "OK"
Drop-Forged Die



**Taper
Pin Reamer**

**GTD
Spiral
Fluted**



GTD "Hex" Die Set
For Re-Threading

BLIZZARD DISABLES WIND-MILL

Christmas Present Prevents Bursting Pipes

That no previous experience is necessary to do good work with taps and dies is attested by this experience of Mr. V. Morgan, Walcott, North Dakota, who repaired his wind-mill in less than half an hour and so was able to prevent a freeze-up which would have ruined a good part of his piping system, at the same time saving his wind-mill from destruction by the gale:

It was during one of the worst storms of last winter that my windmill became disabled. The little bolt that adjusted the bolt on the wheel was broken during the extra strain put upon it by the storm. I saw that it was at the mercy of the storm and that unless I got a bolt and that shortly that it would be destroyed. I quickly looked over my available supply of bolts. Nothing doing. Some too long, some too short. Going to town twelve miles away was out of the question. My brother had given me a set of taps and dies for Christmas, and I had never used them, never made a bolt or cut a thread. However, I found among my bolts one of the right diameter although a little long. I quickly put it in the vise and with a hack saw soon had it the right length. I then got out my taps and dies put a thread on the bolt, found a tap that would fit, climbed the tower and inside of thirty minutes was pumping water for the stock, saving me a vexatious delay and a long trip to town over badly drifted roads.

BRACE ROD FOR PLOW HANDLES

Home Made Repair Stronger Than New Part

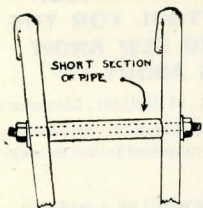
Use of pipe cutter enables Mr. J. L. Justice, Logansport, Indiana, to repair broken plow brace in a few minutes.

The wooden brace or piece that separates the handles of the plow broke one

HOW I FIXED IT



morning. A piece of short length half-inch pipe hung above the bench. In a twinkling, the pipe



was cut the same length as the broken wood brace with the pipe cutters, the rod that extends from one plow handle to the other was first put through one plow handle and then through the pipe and the other handle, which made a separator that will outlast the plow.

ONE OF THE COMMONEST DIE JOBS

By J. L. Justice, Logansport, Indiana
This job of Mr. Justice's is one of the simplest yet one of the most important of farm threading jobs. Everybody can use this kink:

In replacing bolts on machinery sometimes I find it difficult to secure a bolt with long enough threads on it. It is a simple matter to put the bolt in the vise, and with the proper size die run the threads as far down as needed. Just a simple kink, but if in a hurry it will save looking through the stock of bolts to find the needed one.

NEW CORN SHELLER CRANK

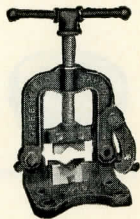
Indiana Farmer Tells How He Fitted One

Mr. J. L. Justice, Logansport, had to make the squared end of his corn sheller shaft fit the threaded hole in the end of a longer crank. This is how he did it.

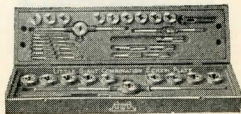
We wished to put a longer crank on the corn sheller to be used for shelling seed corn. The required crank was in the shop but it happened to be the kind that screws on the shaft. With a file to round off the end of the shaft and a die to cut the needed threads the job was completed. When we wish to belt the sheller to the line shaft the crank is unscrewed and laid up out of the way.



GTD
LINCOLN
Twist Drill
For Bit Brace



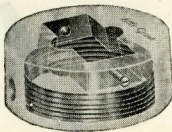
GTD Pipe Vise



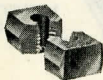
GTD "Little Giant"
Combination Screw Plate

HOW I FIXED IT

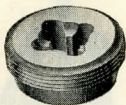
GTD



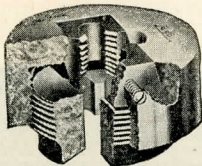
GTD "Little Giant"
Die Cap



GTD "Little Giant"
Die



GTD "Little Giant"
Die Guide



GTD "Little Giant"
Cap, Die and Guide
Assembled

"THE TAPER PIN REAMER IS A HANDY TOOL FOR THE FARMER AND FEW KNOW ANYTHING ABOUT IT"

Says Mr. Fullerton, of Belton, Missouri
Read how he fixed his magneto drive shaft
gear after the garage man had failed to make
a suitable repair:

I broke a small cog wheel on a magneto drive shaft and when the new wheel came it was blank. I took it to a garage machine shop and also the old wheel and and told them to fix me up. They did all right for my engine did not give me its full power and over-heated which it had not done before. I was some time finding out what the trouble was until I secured a service man from the tractor company, and he told me the engine was out of time. He sent me out a new cog wheel and a taper reamer. I still had the old wheel to go by and a good lesson in what accurate work meant. I drilled the hole and reamed it out to fit the taper pin which binds in such a hole and my engine was OK again. Since that time I have had several occasions to use this taper reamer on a governor drive shaft and putting a small pulley on a shaft with a taper pin instead of a set screw.

EXPENSIVE PIPE FITTING REPAIRED

Warwick Farmer Saves Price of New One
Mr. Demarest, Orange County, New York, had the misfortune to crush the tapped end of an expensive pipe fixture. By careful work he was able to make it good as new:

An expensive fitting became crushed out of shape. After some trouble, I was able to round up the crushed end again and retap it with a pipe tap. Then by adjusting the dies in the holder so as to take a very light cut the pipe was threaded with an oversize end, and when screwed into the fitting made a good, tight joint.

HOW I FIXED IT



FENCE POST BRACES MADE OF PIPE

Suggestion by Mr. J. L. Justice

This Indiana farmer strengthens the fences on his Logansport farm with discarded iron pipe. He says:

We have used quite a little iron piping in fence building around the yard and lots, the pipe being used as brace material between posts at the ends and corners. The hack saw and pipe cutters have been useful in cutting the pipe the right length. The pipe wrench is very useful in tightening the nuts on the fence stretchers.



GTD
Pipe
Wrench

CUTS HOLE IN INSTRUMENT BOARD

Metal Dash Fitted With Clock

For cutting large holes in sheet metal nothing is any better than a spiral fluted pipe burring reamer. Mr. Ben Dreyer of Palatine, Illinois, used one to make a hole of the proper size in the instrument board of his car:

I wanted to put a clock onto the instrument board of my car, and after I cut a hole with a cold chisel I smoothed it and made it larger with a pipe burring tool.



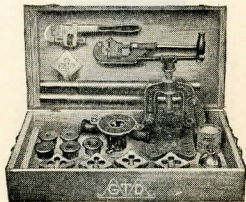
GTD
3 Wheel
Pipe
Cutter

WASHERS ANY THICKNESS

Indiana Farmer Makes Them As Needed

Mr. J. L. Justice, R. F. D. No. 2, Logansport, uses pipe cutter to make washers for special jobs. He writes:

We use the pipe cutter a dozen or more times a year to cut thick washers from different sized pipe. The washers are used as extension washers for taking up wear or for the purpose of making letter adjustments on farm implements and machinery. This saves the trouble and inconvenience of using a number of thin washers. These washers are also convenient for taking up the slack in steel hoop silos when the threads on the rods have been all used up.



Assortment A
GTD Pipe Tool Set

HOW I FIXED IT



FORD FENDER TIGHTENED

Vibration Had Worn Out Threads

The screw-plate of Mr. Cleon B. Warren Waco, Texas, is one of the most useful tool sets he owns. A little while ago one of the fenders on his Ford became loose. He got out his dies, repaired the holding bolt and had it back in shape in short order. Mr. Warren's letter follows:



GTD
Hand Tap

The fender (rear) on the Ford that we use on the farm had become loose. It could not be tightened up because the threads were worn by the vibration. The $\frac{3}{8}$ " eye bolt that holds the fender was removed and the threads run down on the bolt with a die from the screw-plate. When it was replaced it could be tightened.

BACKS WAGON INTO ARTESIAN WELL PIPE

Pipe Stock and Die Saves \$5.00

Experience of Olek Brothers on their farm at Forbes, North Dakota, proves value of having repair tools handy for emergencies.

Having an artesian well on my farm I accidentally ran into it with my wagon, burst the pipes right in two in the joints. I appealed to my pipe stock and got this damage fixed in fifteen minutes. This job alone saved me five dollars.

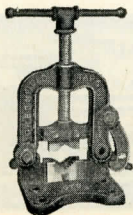


GTD
Burring Reamer

ILLINOIS FARMER INSTALLS CUT-OUT

Exhaust Pipe Quickly Cut

Mr. Ben Dreyer, Palatine, Illinois, had to cut a hole in the exhaust pipe of his Ford so that he could attach a muffler cut-out. Read how he did it:



GTD Pipe Vise

The other day I wanted to put a cut-out on my Ford car. I bought the cut-out and had to make the hole in the exhaust pipe into which to fit it. To cut this hole I used the pipe cutter and it worked fine.

HOW I FIXED IT

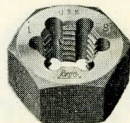


MOWING MACHINE BREAKS DOWN

Mr. A. W. Garrison Repairs Pitman Rod Bolt

This Rockville, Missouri, farmer had a set of taps and dies and was able to go ahead with his work after only a few minutes delay. If he had to go to town or send for a repairman he would undoubtedly have lost a part of his hay crop. Read his story:

Last summer a bolt gave way on the pitman rod of the mowing machine when I was right in the rush of haying. This bolt could not be substituted with any old bolt so I got my taps and dies, a smaller nut and held the bolt with a wrench. In a few minutes the threads were made and I was cutting hay again. This saved me time and money too.

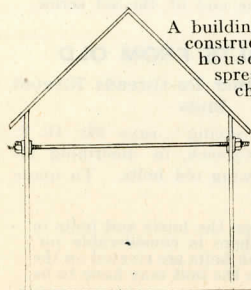


GTD "Hex" Die
For Re-Threading

REINFORCES SPREAD BUILDING

Chicken House Strengthened

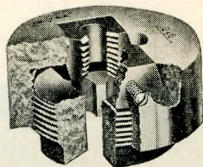
Cheaply built hen house starts to fall and is made strong as new by practical New York farmer, Mr. H. P. Demarest of Warwick:



A building, a cheaply constructed chicken house, started to spread. We purchased an iron rod of suitable length, threaded the ends, placed big heavy washers and nuts on the rod and by this means soon brought the building together.



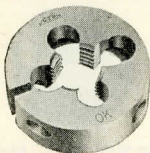
GTD
Repairman's
Taper Reamer



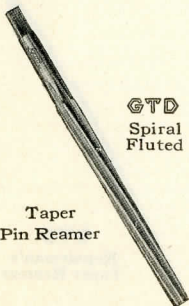
GTD "Little Giant"
Die, Guide and Collet

HOW I FIXED IT

GTD



GTD "OK"
Drop-Forged Die



GTD
Spiral
Fluted

Taper
Pin Reamer



GTD "Hex" Die Set
For Re-Threading

MISSOURI FARMER REPAIRS BROKEN SET SCREW

Belton Man Tells How

Mr. Wm. B. Fullerton, Proprietor of Westogle Stock Farm, describes his method of replacing broken set screws:

Set screw adjustments are used extensively on farm machinery, and are often a source of much trouble as they are easily twisted off if the joint becomes rusted or by tightening too tight. In such cases I drill out the stub with a chain drill and use a bit $\frac{1}{16}$ " smaller than the old set-screw. Then tap out the hole with bolt tap of the desired size and it is ready for a new set screw. Sometimes things do not work out just right if the drilled hole is a little off center or crooked and when tapped out the threads are not strong enough to hold much strain. In such case if the casting is big enough to permit a larger hole I drill out again with a larger bit and fit as stated above with a $\frac{1}{2}$ " set screw where at first there was a $\frac{3}{8}$ " set screw. Care must be taken in drilling hole not to injure shaft any more than necessary to get casting loose on shaft. Also when free on shaft the casting must be removed in order to tap out for set screw threads.

(If it is impossible or inconvenient to take apart the casting and shaft to allow clearance for tapping, we would recommend using a bottoming tap for a full length thread or, in a pinch, filing a long chamfer on the end of the set screw. —EDITOR.)

NEW BOLTS FROM OLD

New York Farmer Re-threads Riveted Ends

"An important saving", says Mr. H. P. Demarest of Warwick, in describing his practice of renewing old bolts. To quote Mr. Demarest:

In order to keep the burrs and bolts in place where there is considerable jar, the ends of such bolts are riveted on the burrs. In time the bolt may have to be

HOW I FIXED IT



removed, in which case the burr will probably be split off with a chisel. Said bolt may be used again if the bolt end is smoothed off with a file and re-threaded to take a new burr. An important saving in a farm where bolts of all types are used, and all sizes are not always at hand to fit the special conditions found on farm machinery.

NOVEL WAY TO SHAPE HORNS OF PRIZE CATTLE

Westogle Stock Farm Owner Uses Ingenious Method

Mr. Wm. B. Fullerton of Belton, Missouri, has devised a very clever scheme for making the horns of his prize cattle grow where he wants them. It's a very simple device, too. He explains it as follows:

Secure bolt nuts 1" to 1 $\frac{1}{4}$ ". These may be bought new or secured from R.R. section hands. With post drill make hole $\frac{5}{16}$ " through one side. Then tap out hole with $\frac{3}{8}$ " bolt tap for a $\frac{3}{8}$ " set screw 1 $\frac{1}{4}$ " long. These weights can be slipped on end of horn in desired position and set screw tightened to hold nut in place.

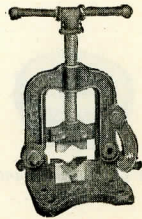
STAYS FOR HEAVY-BEARING TREES

Mr. Demarest Uses Special Tie Rods
Warwick, New York, is good fruit growing country. Under exceptionally heavy yields trees are frequently split and broken by the weight of the fruit. If left untouched these cracks and crevices soon rot and kill the trees. Here is a suggestion which, if properly done, will add many years to the life of a broken tree and prevent weak trees from splitting.

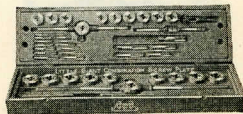
Special bolts (particularly long ones) are often needed on the farm as in bolting trees together, in which case the head is formed by simply making a short bend in the end of the iron.



GTD
LINCOLN
Twist Drill
For Bit Brace



GTD Pipe Vise



GTD "Little Giant"
Combination Screw Plate

HOW I FIXED IT

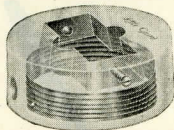
GTD

HOW TO MAKE A FENCE GATE

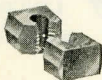
By Roscoe E. Hay, Overbrook, Kansas

Here's a suggestion that most farmers can follow to advantage if they need a new fence gate:

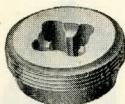
Good gates can be made by any one possessing pipe dies and cutter for the required size pipe. Two elbows and one union are required for each gate, besides the necessary pipe depending on the size of frame. The top and sides can be made from one piece of pipe. Cut and



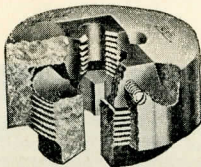
GTD "Little Giant"
Die Cap



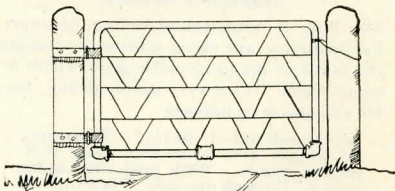
GTD "Little Giant"
Die



GTD "Little Giant"
Die Guide



GTD "Little Giant"
Cap, Die and Guide
Assembled



thread both ends so that the uprights will be four feet and the top the desired width. Then bend sharply four feet from the ends of this piece and screw on the elbows. Use two pieces of pipe in the bottom crossbar putting in the union. (The union is necessary unless one has left hand taps and dies). One can make the hinges in a few minutes from old strap iron heating in the farm forge. Cover with heavy woven fencing. Do not use light wire nor small pipe in the construction of these gates.

BATTERS VALVE STEM THREAD

Inner Tube Requires Repair

Mr. Ben Dreyer, a farmer living in Palatine, Illinois, was able to fix his inner tube valve stem because he had a tap of the proper size handy:

While working with the inner tube of my tire I battered the threads on the valve stem. I used a tap to rethread this stem.

HOW I FIXED IT



EMERGENCY REPAIRS WITH BROKEN TAPS

Nebraska Farmer Tells One Way to
Save Valuable Time

A monkey wrench and hammer are the tools used by Mr. George G. McVicker, of North Bend, to make taps of the proper size for ordinary repairs where his regular screw plate taps are not suitable. He says:

With a repair outfit on the farm where many of the repair jobs have to be done in the field where the broken machine is at work, it is impossible to carry a complete set of tools.

Many times threads have to be cut in places where a standard tap will not be of any use, such as for reseating a grease cup, or replacing a set screw when threads are stripped from the collar or wheels. To meet these emergencies I carry one extra of the common used sizes $\frac{3}{8}$ ", $\frac{7}{16}$ " and $\frac{1}{2}$ " of the tapering blacksmith's taps, and when necessary I clamp one in a large monkey wrench and break it off with a blow of hammer to the proper length, to use as a plug tap. In many cases this saves hours' time in removing some part, in order that a standard tap could be used. Thus the cost of such a tap is small when compared to the time saved.

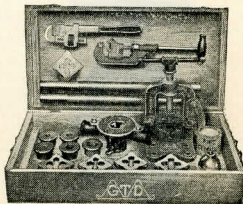
(Here's an improvement on Mr. McVicker's plan. He tells us in another letter that he already owns a screw plate containing taps of the sizes he needs $\frac{3}{8}$ ", $\frac{7}{16}$ " and $\frac{1}{2}$ ". If, instead of buying taper threaded blacksmith's taps which in the first place do not cut a very good thread because they are tapered while the bolt thread is straight and which he has to spoil each time he uses one—if, instead, he would buy one bottoming hand tap of each size and thread the hole first as far in as he could with the tap from his screw plate finishing the job with this bottoming tap, he would be able to do a much better job and could keep his taps instead of breaking them. The bottoming hand taps cost about the same as the blacksmith's taper taps so that there is no question about which method is the cheaper.—EDITOR.)



GTD
Pipe
Wrench



GTD
3 Wheel
Pipe
Cutter



Assortment A
GTD Pipe Tool Set

HOW I FIXED IT

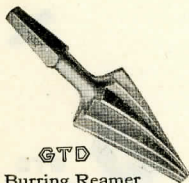


EASY WAY TO GREASE WAGON HUBS

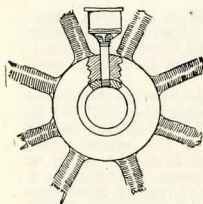
Suggestion From York State Farmer
Who wants to jack up 4 wheels of a heavy wagon when they can grease them easier and oftener by turning grease cups on the hubs? Mr. Demarest of Warwick has a neighbor who didn't. Read how he made this improvement:



GTD
Hand Tap



GTD
Burring Reamer



with grease cup attached as shown.

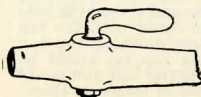
Another farmer required considerable use of a heavy wagon, the axles of which were hard to grease. The difficulty was met by drilling through the hub and threading the inside iron box with a pipe tap then fitting $\frac{1}{8}$ " pipe

FARMER SAVES COUPLE OF DOLLARS

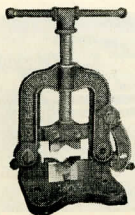
Lead Pipe Valve Used With Iron Pipe

Mr. H. P. Demarest well known fruit grower of Warwick, New York, explains how he adapted an old lead pipe shut-off cock so that he could use it in connection with regular iron pipe. He says:

A valve of the type indicated was at hand. It was not threaded although we



desired to use it with iron pipe. By removing the guide from our pipe die outfit I converted this old lead pipe type of shut-off into a perfectly effective shut-off for use with iron pipe and saved a couple of dollars by so doing.



GTD Pipe Vise

HOW I FIXED IT



MANY USES FOR HOME-MADE EYE-BOLTS

Melvin, Iowa. Farmer Suggests Three Jobs

Mr. Albert Schmidt, R. F. D. Box 10, Melvin, owns a screw-plate and knows how to make good use of it. These three eye-bolt applications will suggest numerous others that can be made just as easily by the screw-plate owner.

I have made eye-bolts of all sizes for use in lots of ways. I made eye-bolts on all our hooks on hog pens, in our hog house using $\frac{1}{4}$ " iron. I also made some large eye-bolts for a grip on the windows which are hinged on the top in our hog house. When the windows are raised a peg or hook through the eye-bolt holds them open. I also had some square hollow iron taken from an old binder from which I made two two-horse eveners using eye-bolts, to fasten the single trees. There are so many places where eye-bolts can be used to good advantage but without the use of an assortment of dies they would not be used or would have to be made at the blacksmith's.

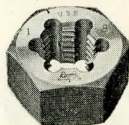
SCRAP-PILE CALLED ON

Furnishes New Rub-Iron Bolts

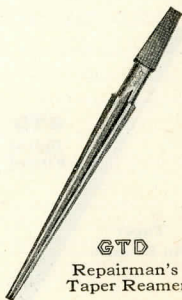
A Texas man, Mr. C. B. Warren, R. F. D. No. 5, Waco, found that both rub-irons on his heavy wagon were loose.

In the scrap pile he found long bolts of the right diameter and with his screw plate he was able to thread them to fit. Mr. Warren says:

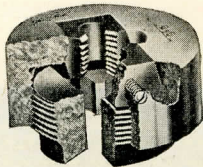
The "rub-irons" on a wagon bed had each lost a $\frac{1}{4}$ " bolt about 2" long. We could not find one the proper length. By finding a $\frac{1}{4}$ " bolt in the scrap pile we cut one the proper length with a hacksaw, and with a die from the screw-plate ran the threads on the bolts. The same nuts were used that were on the long bolts



GTD "Hex" Die
For Re-Threading



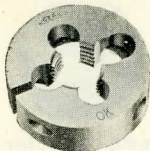
GTD
Repairman's
Taper Reamer



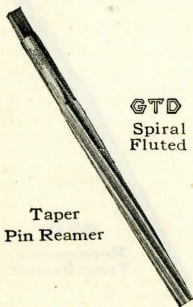
GTD "Little Giant"
Die, Guide and Collet

HOW I FIXED IT

GTD



GTD "OK"
Drop-Forged Die



GTD
Spiral
Fluted

Taper
Pin Reamer

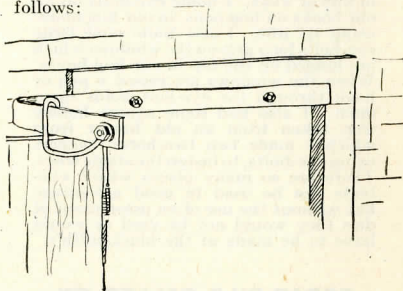


GTD "Hex" Die Set
For Re-Threading

AUTOMATIC DOOR CATCH

Clever Device Used on Hog House Doors

Mr. Albert Schmidt of Melvin, Iowa, has devised a novel door catch which he gives directions for making. This can be applied to any door and may be fitted with a weight or door spring for closing and a rope to trip the catch if this is desired. The rope in this case would be fastened to the bent hook on the latch so that it could be raised to release the door which in turn would be closed by a door weight or spring in the usual way. Mr. Schmidt's suggestion follows:



This door catch consists of about 22" of flat strap iron $1\frac{1}{2}$ " wide and about $\frac{1}{4}$ " thick, and a $\frac{7}{16}$ " rod about 8" long and a $\frac{7}{16}$ " machine bolt. Now take the 22" strap iron and bend 5" in an L shape or square shape, now there will be one piece 17" long which should have $2\frac{1}{2}$ " holes drilled about 2" from each end. This is for the purpose of fastening it to the building or woodwork. Now the 5" piece should have a $\frac{7}{16}$ " hole drilled about $\frac{1}{2}$ " from the outer end, and should be tapped for $\frac{7}{16}$ " machine bolt. Next take the 8" x $\frac{7}{16}$ " rod and bend it in a sled runner shape as shown making eye on end large enough for $\frac{7}{16}$ " bolt and bending other end over to act as a hanger. Now assemble the catch putting the $\frac{7}{16}$ " bolt in tapped hole screwing up tight enough so that the catch will work freely and put a burr on the bolt. Now fasten to the wood frame using $2\frac{1}{2}$ " lag screws through the

HOW I FIXED IT



$\frac{1}{2}$ " holes in the longest piece. Tapping the hole where the eye is fastened keeps the catch from binding and in the correct position. We have had several of these catches for several years on our cement block hog house and they are giving good satisfaction. About the only catch that can be fastened to such a building.

OLD PULLEYS USED IN FARM SHOP KEEP PENNIES HOME

Repair Tools Save Money in Many Ways

This suggestion from Mr. J. L. Justice, Logansport, Indiana, will undoubtedly bring to mind other ways of saving money:

We have picked up a good many old pulleys to use on the line shaft in the shop and on driven machinery. It has been necessary to bore holes through most of the pulleys, tap the holes with threads and use a set screw to make the pulleys rigid on the shaft. This is another way in which a few pennies are kept home.

HOME-MADE SHOWER BATH

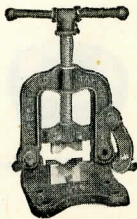
City People have Nothing on Texas
Farmers

Mr. Cleon B. Warren, of Waco, writes about a shower which he and his brother made.

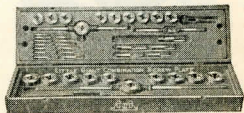
Our water tank is built up about twelve feet above the ground at one corner of the house. Last summer my brother and I decided that we wanted a shower. We cut the main pipe that comes from the tank. Put threads on the pipe with ratchet stock. Then using Tee, nipple and union connected back up. By placing a two foot piece of pipe in the T the shower was in about the center of the tank. The main lead came down one side of the tank. We boarded up the sides under the tank and put in a slat floor.



GTD
LINCOLN
Twist Drill
For Bit Brace

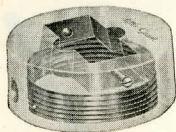


GTD Pipe Vise

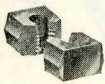


GTD "Little Giant"
Combination Screw Plate

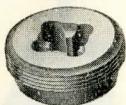
HOW I FIXED IT



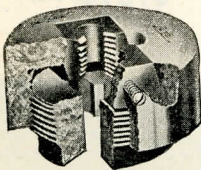
GTD "Little Giant"
Die Cap



GTD "Little Giant"
Die



GTD "Little Giant"
Die Guide



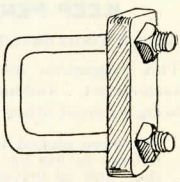
GTD "Little Giant"
Cap, Die and Guide
Assembled

FARMER MAKES CLAMP

Iowa Man's Taps and Dies Used for Many Jobs

Save your old bolts and nuts and in your spare time renew them as Mr. C. L. H. Vagts, of George, Iowa, did. If you need a clamp this suggestion from Mr. Vagts may help you.

Now I often have spoiled threads on an old bolt. I take my thread cutter and re-thread it and the burr goes on fine. On the other hand I often have a spoiled burr. I take my tap and run that through and my burr is as good as new nine times out of ten. If I need a clamp for some purpose I take a rod of the proper size thread on both ends and bend to shape and I have got the needed article.



WORN CLEVIS AND PIN RENEWED

Nebraska Farmer Tells How to Do It
This suggestion of Mr. George G. McVicker, North Bend, Nebraska, is one which may also be applied to worn bolts and nuts.

Of course large nuts should be heated in a forge or fire before hammering as their size makes it difficult to upset the metal when cold.

The first part of the common malleable farm clevis to wear is the threads on the pin and the threads in the clevis. This can have a new useful life if new threads are cut on the pin at the same place as the old ones, then holding the clevis on the anvil or solid bar so as blows may be administered to as many sides of the threaded hole as possible, it may be closed sufficiently for new threads to be cut to receive the new threaded pin.

HOW I FIXED IT

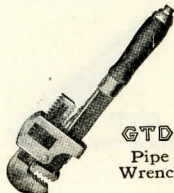


FARMER'S WIFE REPAIRS KITCHEN PUMP

Pipe Wrench Proves Its Usefulness

Mrs. Hattie E. West, Milton Junction, Wisconsin, keeps a pipe wrench handy and finds it useful in a great many ways:

In addition to using it for taking apart the cylinder of the pump for putting in new buckets, she also uses it for taking out plugs from gasoline drums, repairing faucets in the water system and other similar jobs.

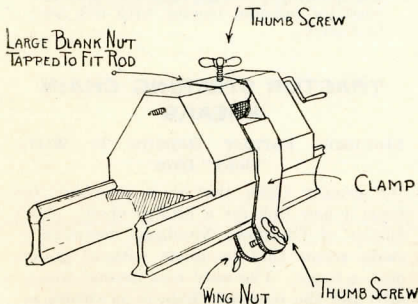


GTD
Pipe
Wrench

HOME-MADE LATHE TAIL-STOCK

By H. P. Demarest, Warwick, New York

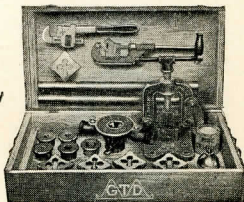
This practical farmer used his screwplate to good advantage in making a new tail-stock for his small lathe. He sawed out a hard wood block of the size and shape indicated



and grooved it to fit on the ways of the lathe bed. Then procured a large blank nut and tapped it out with his $\frac{1}{2}$ " tap to take the bent and threaded $\frac{1}{2}$ " rod which was to serve as the center. Also tapping it through one side for a $\frac{1}{4}$ " thumb set-screw. The stock when assembled was fastened to the lathe with a home-made clamp.



GTD
3 Wheel
Pipe
Cutter



Assortment A
GTD Pipe Tool Set

HOW I FIXED IT

GTD

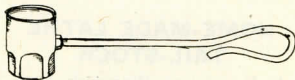


GTD
Hand Tap

HUB CAP MAKES GOOD BABBITTING LADLE

Another Ingenious Idea From Iowa Farmer

Asbestos packing, an old hub cap, a piece of rod and a couple of nuts were the materials, and a drill and screw plate were the tools used by Mr. Albert Schmidt of Melvin, to make this babbitting ladle. The directions follow:



I took an old hub cap from plow wheel drilled a $\frac{7}{16}$ " hole halfway down one side and put in the end of a $\frac{7}{16}$ " rod about 14" long, then put burr on inside and out with asbestos packing on inside. Thread rod about $1\frac{1}{2}$ ". This ladle can also be used for priming tractor with hot gas in winter.

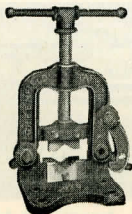


GTD
Burring Reamer

TRACTOR STEERING CHAIN BREAKS

Montana Farmer Repairs It With
"Cold" Iron

We usually think that it is necessary to forge a new link for a broken chain. Mr Sassen of Glasgow, Montana, describes a chain repair that he made without going near a forge. The only tool needed was a drill and the repaired chain is as strong as when new.



GTD Pipe Vise

As I was plowing I turned around too short and broke my steering chain. This is how I fixed it. I took 2 flat pieces of iron 3 inches long $\frac{1}{4}$ " thick and 1" wide, drilled two $\frac{1}{2}$ " holes $\frac{1}{2}$ " in from end, attached each chain link with a bolt making the chain as good as new. The chain will have about the same length as before.

HOW I FIXED IT

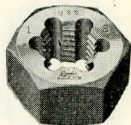


AS HANDY WITH BINDER AS WITH STEAM ENGINE

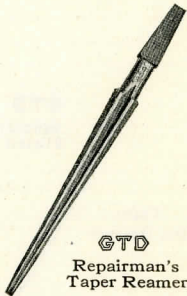
Nebraska Farmer Finds Pipe Wrench Indispensable

Here's a suggestion that every farmer who sows grain can profit by. It comes from Mr. George G. McVicker of North Bend, a man who has a good assortment of repair tools and knows how to use them. His pipe wrench, for instance, can be used everywhere a monkey wrench would work and on many other jobs besides.

When harvesting grain with damp straw continuous trouble is met with (every farmer knows) with the tough fibers wrapping around the inside of sprocket wheels and on canvas rollers. Most of these sprocket wheels are screwed on, some with right hand and some with left hand thread. The quickest way of removing the wound on straw especially when it gets beneath the shield which is supposed to keep it out is to screw off the sprocket or gear, pull off the wound on coils of straw and replace the wheel. To do this I carry an 18" pipe wrench which will hold the roller or shaft while wheel is screwed off. It will also come very handy in turning a shaft slightly for timing the binder, throwing out a wet bundle, or springing some rod or brace found necessary. Such a tool is almost as handy with a grain binder as with a steam engine.



GTD "Hex" Die
For Re-Threading



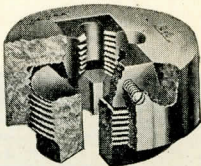
GTD
Repairman's
Taper Reamer

THREADS OWN CRIB RODS

Illinois Farmer's Dies Are Useful

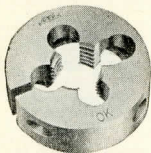
This letter from Mr. W. E. Campbell, Murock, Illinois, is short but the job meant more than a few dollars to him.

In building a new crib on the farm, several dollars' worth of work was done in threading the rods that hold the sides of the crib from spreading.

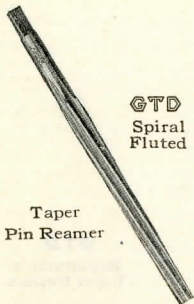


GTD "Little Giant"
Die, Guide and Collet

HOW I FIXED IT



GTD "OK"
Drop-Forged Die



Taper
Pin Reamer

GTD
Spiral
Fluted

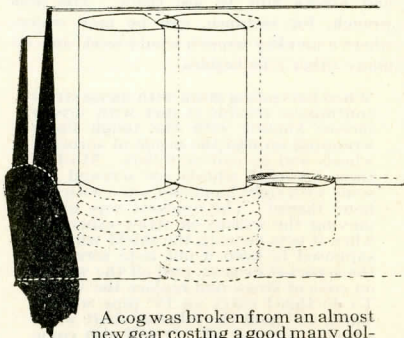


GTD "Hex" Die Set
For Re-Threadng

COG BREAKS OUT OF EXPENSIVE GEAR

Mr. Haskell Tells How He Fixed It.

This job of Mr. Haskell's of Conde, South Dakota, is a good example of the type of repair work which the modern farmer can make with his repair tools. Frequently a single job will save many times the cost of the tools used.



A cog was broken from an almost new gear costing a good many dollars, and requiring a shut down until a new one could be secured. But instead of waiting for a new one, I got busy with my tools and it was soon going again. My procedure was this. A $\frac{5}{8}$ " hole was drilled into the gear at the place where tooth was broken off but not clear through the metal. Then with a bottoming tap $\frac{3}{4}$ " threads were cut and a $\frac{3}{4}$ " stud screwed in tight. Then on one side the stud was filed down flat so as to allow the next hole to be drilled partly in the first hole overlapping about $\frac{1}{4}$ " or $\frac{3}{8}$ " but this hole was drilled clear through the rim of the wheel and threaded out with a $\frac{3}{4}$ " taper tap and another stud inserted. This was continued until seven studs were so secured that is, alternating as shown in the sketch, then with a hack saw and file the job was smoothed up and the artificial tooth is doing business today. It

HOW I FIXED IT



might be well to state that the drilling was done with an automatic chain drill, the taps used were "Little Giant."

HOW TO MAKE A PACKING GLAND

By Nelson Smith, Hutchinson, Kansas

Mr. Smith has done a very clever piece of work in designing this packing gland and deserves a good deal of credit. The only suggestion we can make would be to ream bushings "AA" to fit the pump rod snugly if high pressures are to be used. Under all ordinary conditions, however, Mr. Smith's stuffing box will be leak proof:



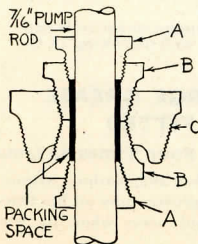
GTD
LINCOLN
Twist Drill
For Bit Brace

The drawing below is supposed to be of a packing gland, made from ordinary pipe fittings, for pipe size $1\frac{1}{4}$ " and pipe rod size $\frac{7}{16}$ ".

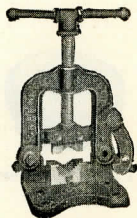
A bushing $1\frac{1}{4}$ " outside and $\frac{1}{2}$ " inside (C) was used for the body of the gland. This was tapped (with a GTD $\frac{1}{2}$ " pipe tap) from the inside so that two $\frac{1}{2}$ " bushings (BB) could be screwed in, from inside and outside until they came solidly together, forming the sides or walls of the packing space.

Then two $\frac{3}{8}$ " bushings (AA) were used. Screw one of them tightly into the bottom or inside $\frac{1}{2}$ " bushing. The other one is to be used in the top for the packing nut, and should

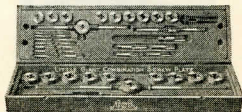
be turned entirely in and out a few times so that it will work nicely.



I used candle wicking for the packing and it certainly does the business for washing the auto, etc., and for pumping water into a 30' silo.

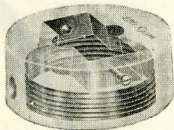


GTD Pipe Vise

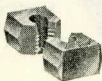


GTD "Little Giant"
Combination Screw Plate

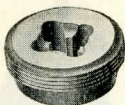
HOW I FIXED IT



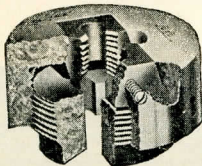
GTD "Little Giant"
Die Cap



GTD "Little Giant"
Die



GTD "Little Giant"
Die Guide



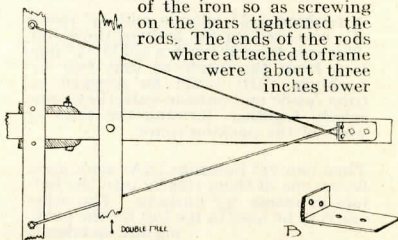
GTD "Little Giant"
Cap, Die and Guide
Assembled

TRUSSES FITTED TO DRILL TONGUE

Continued Breakage Prevented

If you had broken two drill tongues, one right after the other you'd figure out a good way to strengthen the third. That's just what Mr. George G. McVicker experienced with his grain drill and he worked out such a good repair job that we're passing it on to you just as he gave it to us.

After breaking two tongues from my grain drill I equipped the third one with two side stay rods of $\frac{1}{8}$ " rod. A casting at the base prevented using a heavier tongue so the rods were resorted to. I threaded one end of each rod and fitted to each a nut. A bolt held the end next to drill by passing through an eye in end of rod and hole in the frame. An iron as shown at (B) was attached to tongue by two bolts and the ends of rods placed through holes in the angle bend of the iron so as screwing on the bars tightened the rods. The ends of the rods where attached to frame were about three inches lower



than rear end of tongue so the rods supported the load as well as taking in the side strain.

EXTRA LARGE GREASE CUPS FITTED

One Filling Lasts Four Times As Long
Mr. Oscar S. Olsen, Box 262, Amboy, Minnesota, used to fill the grease cups on his tractor both morning and noon when he was using it all day.

HOW I FIXED IT



A few minutes' work in fitting larger cups eliminated three quarters of the work of filling the cups. Mr. Olsen says:

I purchased a well known make of tractor several years ago and I found that the grease cups were too small to suit me. So I obtained a set of pipe taps and reamers and reamed the holes and threaded them to take larger size grease cups. I can now make a two days' run with one filling of the grease cups, whereas before I had to fill them twice a day.



GTD
Pipe
Wrench

HOME-MADE STEEL BOLT PREVENTS BREAKAGE

Regular Bolts Broke Every Time

A Murdock, Illinois farmer, Mr. W. E. Campbell, got sick of replacing broken seat spring bolts on his disc-harrow and finally replaced them with a home-made steel bolt. You'll be interested to read his letter:

I have an old disc-harrow which gave much trouble in breaking bolts through the main frame and seat spring. I could not get a bolt strong enough to hold it. I procured a piece of steel rod the length of the bolt, threaded each end and fitted nuts. This steel bolt, home-made, has not broken in two years' use.



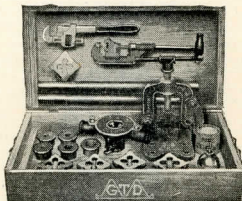
GTD
3 Wheel
Pipe
Cutter

REAMER, TAP AND OVERSIZE SCREW USED

Prevent Continued Breakage of Harrow Part

"Easy job," says W. E. Campbell in referring to his repair of a disc-harrow shift lever part. This Murdock, Illinois farmer finds almost daily use for his taps, dies and other repair tools.

Another disc-harrow had a habit of breaking the cap screw that held the shifting levers to the frame. It was an easy job to ream the hole larger, tap threads in it and put in a larger screw. There has been no more breakage.



Assortment A
GTD Pipe Tool Set

HOW I FIXED IT

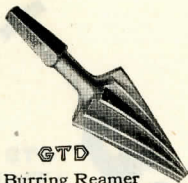


GTD
Hand Tap

HOME-MADE BOLT SAVES AT LEAST \$5.00

Farmer Repairs Automobile Six Miles
From Town

In another suggestion Mr. C. L. H. Vagts, R. F. D. No. 3, George, Iowa, tells us how to make a bolt out of an iron or steel rod. Here is a job where such a bolt, made on the spot in a few minutes, saved a traveler a great deal of delay and several dollars, in fact, more than the cost of the necessary tools.



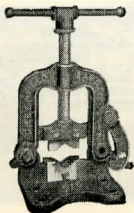
GTD
Burring Reamer

One afternoon along comes a man with a car, on one side of my yard one side of his car goes down on his wheel and he could not go any farther. His spring bolt was broken, and he asked me whether I could help him out. I told him that I did not have the size bolt that he needed, but that I could make one. He was surprised that I could make bolts on the farm, but I made him the necessary bolts in the above described manner put the spring in place and put the bolts in and he went on, where otherwise he could not continue his journey and this is six miles from town, and no one would have come out here for less than five dollars.

NEW MEXICO FARMER MAKES SPRING SHACKLE

Car Repaired in Short Time

The screw-plate at Moreno Valley Potato Farm saved Mr. Charles A. Bukove a trip to town and put his car back in running order without costing him a cent for the repair. It certainly is wise to have suitable repair tools handy. Then when the breaks come you're ready for them. Mr. Bukove says:



GTD Pipe Vise

I broke a spring shackle on my car. I saw I could make a new one in a short time without any cost. I took a strip of good iron size $\frac{3}{8}$ " thick x $1\frac{1}{8}$ " wide and drilled holes according to dimensions of broken one and tapped threads in one hole to screw the spring bolt in.

HOW I FIXED IT

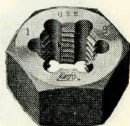


EASY WAY TO GREASE FORD HUBS

Troy Farmer Fits Grease Cups

This New York State man, Mr. C. P. Schaller, sends in a suggestion telling how he changed his Ford hubs so as to grease them easily.

On our Ford Form-a-Truck I tapped all four hubs and put in grease cups so that all the wheel bearings can be greased by filling and screwing down the grease cups, instead of taking off the hub caps. I drilled them with an $\frac{11}{32}$ " drill and threaded them with a $\frac{1}{8}$ " pipe tap.



GTD "Hex" Die
For Re-Threading

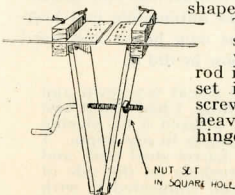
HOW TO MAKE A BELT TIGHTENER

By George G. McVicker

Mr. McVicker of North Bend, Nebraska, has worked out a clever belt tightener which any farmer with a screw-plate can duplicate.

If suitable tools are handy any farmer can make a great many useful articles, including other tools.

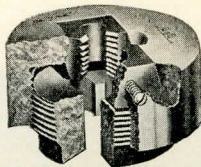
The belt operating the grain elevator in my granary must be laced on the pulleys as no space is left in the trough for placing it on or off. To draw the ends together I constructed a vise as here shown. The two jaws are of $1\frac{1}{4}$ " oak 16" long and the clamp blocks at the top are of 2" x 2" oak 8" long. Each of the four clamp screws are made of $\frac{3}{8}$ " rod with 6" of threads cut on each and a nut run to end of threads to act as a thrust collar. A nut in a square cut socket to fit is at the outer end of the crank shaped clamp screws.



The main vise-screw is made likewise, but of $\frac{3}{4}$ " rod iron and the nut set in as the clamp screw nuts are. A heavy strap barn door hinge holds the lower end of jaws together.

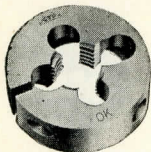


GTD
Repairman's
Taper Reamer

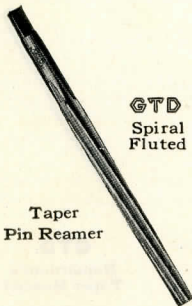


GTD "Little Giant"
Die, Guide and Collet

HOW I FIXED IT



GTD "OK"
Drop-Forged Die



GTD
Spiral
Fluted

Taper
Pin Reamer



GTD "Hex" Die Set
For Re-Threading

ENGINE BASE FILLS WITH RAIN

Troy Farmer Makes Drain

It should never be necessary to leave a machine unprotected from the elements. Machinery is too expensive, and cheap shelters can be made so quickly. On the farm of Mr. C. P. Schaller, Route No. 4, Troy, New York, the stationary engine was used out in the open so much that it was frequently caught in a rain storm. The following letter from Mr. Schaller tells how he installed a drain to get rid of the rain water.

Every time it rains, our vertical Fairbanks gasoline engine which has an open crank case, forming a basin to receive oil to lubricate the large end connecting rod bearing, gets full of water which has to be dipped out before starting the engine. I drilled an $\frac{1}{2}$ " hole through the base to the bottom of the basin, and tapped it with a $\frac{1}{8}$ " pipe tap, then put in a drain cock. Now I can open the cock draw off the water, then close the cock and fill again with oil to the correct level.

FARMER INSTALLS COMPLETE WATER SYSTEM

Writes—"No Trouble Experienced, to Date"

Here is a letter from Mr. George G. McVicker of North Bend, Nebraska, describing how he piped running water through his house, connecting to the range for hot water, etc. He says "Any farmer who can operate a farm tractor or an automobile and keep it going, can do his own house and yard plumbing." Read how he did it.

Last fall, after the wheat was sown and the corn was ripening, I had about two weeks time and I utilized it by placing a water supply system in my home. I purchased a five barrel steel tank and mounted it on brackets on the side of my cellar wall, and connected it with

HOW I FIXED IT



my well about 31 feet from the house, by an underground pipe. I put in a full bathroom equipment and hot water supply tank connected to the range. I followed instructions as furnished by the supply house, making the equipment and to date no trouble has been experienced with it. The tools I purchased or already had are as follows. One $\frac{3}{4}$ " pipe die, one $\frac{1}{2}$ " pipe die and one $\frac{1}{4}$ " pipe die, as well as a stock to fit. One each of 1", $\frac{3}{4}$ " and $\frac{1}{2}$ " pipe taps. One $\frac{3}{4}$ " pipe reamer, one 3" roller pipe cutter, one 12" pipe wrench, and one 18" pipe wrench. Of course I had other common tools, such as a hammer, screw driver etc., but in the whole system I did not have need for more tools. I found that because a plumber or mechanic has a box full of tools does not make his work better. Any farmer who can operate a farm tractor or an automobile and keep it going, can do his own house and yard plumbing.



GTD
LINCOLN
Twist Drill
For Bit Brace

SEPARATOR CASTINGS SPRING TOGETHER AND PREVENT REPLACEMENT OF CONCAVES

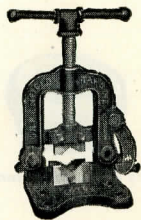
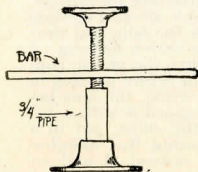
Mr. Vagts of George, Iowa, Tells How He Re-assembled Threshing Machine

A home-made screw-jack made from an iron rod, a bar and a piece of pipe did the trick. The same kind of jack could be made to do many other farm jobs.

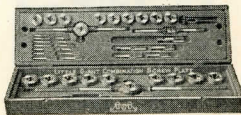
Mr. Vagts explains it as follows:

I had trouble in putting in the concaves in my separator (threshing machine). The castings that held them would spring too close together. After the concaves were taken out I went to work and

took a rod of the proper size, put on a thread for quite a ways and put on a bar, slipped a piece of $\frac{3}{4}$ " pipe on, then I put the rod between castings and screwed them apart and the concaves slipped in nicely.

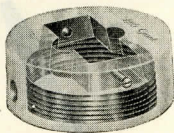


GTD Pipe Vise

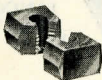


GTD "Little Giant"
Combination Screw Plate

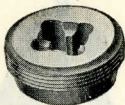
HOW I FIXED IT



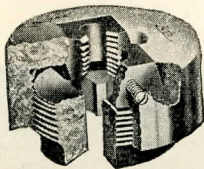
GTD "Little Giant"
Die Cap



GTD "Little Giant"
Die



GTD "Little Giant"
Die Guide



GTD "Little Giant"
Cap, Die and Guide
Assembled

MR. POTTER REPAIRS SPLIT PULLEY

Wonders How They Ever Kept House Without Taps and Dies

This job, described by Mr. H. T. Potter of Leonardsburg, Ohio, certainly saved him some money, probably more than the cost of his screw-plate. In fact, he tells us in his letter, "my taps and dies do not owe me anything."

A split iron pulley which we had to use one day was found to have some broken spokes next to the split. Countersunk holes were drilled through the rim and carried on through the hub with a slightly smaller drill. These holes in the hub were tapped out, bolt made to fit and screwed home, holding the rim in position ever after. After we use a set of dies and taps a short time we wonder how we kept house without them.

CLUTCH HUB BEARING DRY

Farmer Installs Grease Cup

Mr. C. P. Schaller, Troy, New York, has a Saxon Six. When he went over it the first time to grease it his instructions book told him to lubricate the hub bearing in the clutch. Mr. Schaller thereupon discovered that the bearing had not been provided with any means for lubrication. Read how he fixed it.

The hub bearing of the multiple disc clutch in our Saxon Six automobile was left with nothing in the hole for lubrication. The Saxon people advised melting the grease to pour in the hole and thus fill the cavity of the clutch bearing. I tried it and found that the grease congealed and backed up before putting in enough to be worth while, the hole being the right size I tapped it with a $\frac{1}{8}$ " pipe tap, removed the chips, put in a grease cup and greasing this member takes but a second instead of half an hour.

HOW I FIXED IT

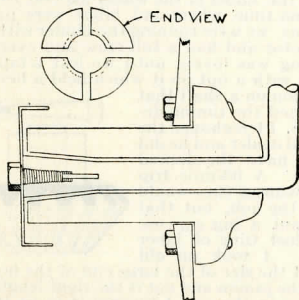


EXPANDS CULTIVATOR DISC AXLE

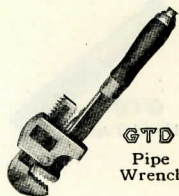
Taper Screw Takes Up Loose Bearing

"Renewing one part would not make a fit," said Mr. George G. McVicker of North Bend, Nebraska, "and to renew both parts would be costly."

After a little thought he developed the following idea which made a very good repair.



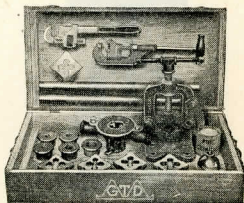
The shank of my corn cultivator on which the furrow discs run had, as all such do, become worn at the end and the box was also worn, making a very poor bearing. Renewing one part would not make a fit and to renew both would be costly. So I cut off with a hack saw the end of the shank until flush with end of disc bearing then drilled into the center of the end of the shank a $\frac{3}{8}$ " hole three inches deep and sawed four slots as shown in end view. Then drove in a tapering punch and spread until the sides of the shank were pushed out straight. I then tapped the center hole with a $\frac{1}{2}$ " taper tap as deep as it would cut. Then cut threads on a tapering bolt to fit with a blacksmith adjustable die. Placed the disc bearing on shank, placed a washer on the dust cap and screwed in the bolt forcing the sides out until they fitted the worn end of bearing.



GTD
Pipe
Wrench



GTD
3 Wheel
Pipe
Cutter



Assortment A
GTD Pipe Tool Set

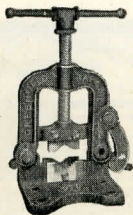
HOW I FIXED IT



GTD
Hand Tap



GTD
Burring Reamer



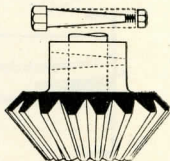
GTD Pipe Vise

MISSOURI FARMER'S SCREW PLATE SAVES 60-MILE TRIP

Binder With Full Crew Delayed Only An Hour or So

Mr. Wm. B. Fullerton, Belton, Missouri, saved many times the cost of his small screw-plate by having it on hand when he needed it. Any farmer who uses machinery is likely to have a similar experience. You will be interested to read Mr. Fullerton's story:

In the midst of the wheat harvest 1918 when time, wheat and labor were precious, we were running the binder with a tractor and had a full crew and everything was lovely until we lost a taper pin with a nut on it which held a bevel pinion on a shaft that turned the timing device. I telephoned the local dealer and he did not have the desired bolt. A 60-mile trip to Kansas City would do the job, but that meant a big expense in lost time of labor etc. I took an old bolt the size of the large end of the hole in the pinion and cut it the right length. Then in the vise I tapered it to fit the hole by filing and leaving a straight end at the small end for threads, which I put on it with my small set of bolt dies. The job was not a perfect fit, but it did the work and we did not lose much over an hour all told.



EXTENSION OILERS PREVENT WEAR

Difficult Job Remedied

The oil holes in the engine belonging to Mr. H. P. Demarest, Warwick, N. Y., were very hard to get at. In order that they should not be overlooked or neglected he made the following improvement:

The oil holes in the engine were inconveniently placed. We tapped the holes, inserted short pieces of pipe, attached an oiler and oiling became more convenient.

HOW I FIXED IT



HORSE CATCHES FOOT BETWEEN WHEEL SPOKES

Mr. Dreyer, Palatine, Illinois, Saves
Valuable Animal and Easily Repairs
Damage

This one job saved Mr. Dreyer more than
the cost of the tools. He writes:

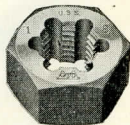
One day I found one of my horses with
her foot caught between the spokes of
the manure spreader. The spokes were
made of iron rods and the only way I
could get her foot out while she was
struggling was to cut the rod. I accom-
plished this by using my bolt cutter. With
this spoke cut, of course, the wheel was
weakened, and I replaced it by using
an iron rod threading it on each end,
and putting a nut on these threads on
the outside of the wheel. This, of course
left a little bump outside of the tire, but
the bump is so small, and the manure
spreader is usually driven on soft ground,
so this makes no difference.

ARE YOUR FEED BAGS ALWAYS KEPT IN ONE PLACE?

Or Do You Have to Hunt For One Each
Time You Want It?

Mr. Ben Dreyer, Route 3, Palatine, Illinois,
has been through this experience and offers
the following solution:

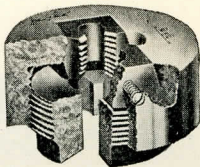
I have been bothered more or less be-
cause of so many feed bags being left
hit or miss about the place. One day
noticing some broken pipe lying against
the side of the building, the thought oc-
curred to me that this might be used to
make a rack in the feed room on which
the bags might be hung. I purchased
from the hardware store two floor
flanges which are merely round pieces of
metal in the center of which is drilled a
hole and threaded to receive $\frac{3}{4}$ " pipe.
These were bolted to the wall, and pipe
with elbows inserted so as to make a
railing extended about 6 inches out from
the side of the wall, over which the sacks
would be hung. The plan worked to
perfection.



GTD "Hex" Die
For Re-Threading

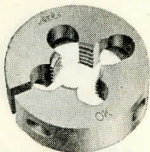


GTD
Repairman's
Taper Reamer

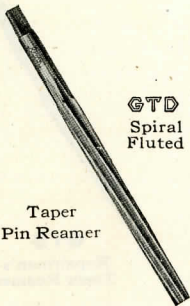


GTD "Little Giant"
Die, Guide and Collet

HOW I FIXED IT

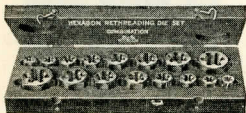


GTD "OK"
Drop-Forged Die



Taper
Pin Reamer

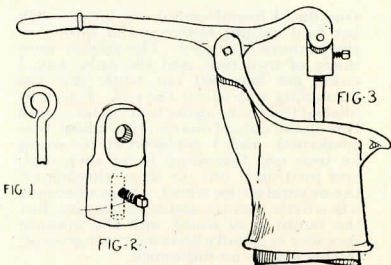
GTD
Spiral
Fluted



GTD "Hex" Die Set
For Re-Threading

GEORGE G. MCVICKER REPAIRS PUMP PLUNGER ROD

Nebraska Farmer Replaces Worn Eye
This repair job by Mr. McVicker of North Bend, Nebraska, might also be used to replace worn out eyes in almost any rod where length had to be maintained.



My pump plunger rod was originally like Fig. 1., but the bolt wore through the eye. I cut off with a hack saw then flattened the end of a piece of 1" shaft 2" long and drilled a new bolt hole. Then I drilled a hole in the center of the round end the size of the plunger rod, then drilled into the side to meet this hole and tapped with a straight tap for a $\frac{3}{8}$ " set screw (Fig. 2). I sawed off the worn out eye of the rod and placed the new-made head on the rod and connected to handle (Fig. 3).

SET SCREW IN CASTELLATED NUT

Cotter Pin Won't Hold It

Mr. Charles A. Bukove, Agua Fria, New Mexico, describes a nut locking device which can be used on any job whether or not there is a keyway to screw the set screw into:

I worked on a car with ball bearing front wheel and on adjusting the wheel

HOW I FIXED IT



for play the castellated nut screwed on so far the cotter pin would not hold the nut from turning so I drilled and tapped a $\frac{1}{8}$ " hole in the nut so it would screw in to the keyway and it held, better than a cotter.

BEVEL GEAR HUB HARD TO OIL

Manure Spreader Oiler Often Filled With Dirt

Mr. Clark P. Schaller, living on Route No. 4, Troy, New York, uses his repair tools and equipment to good advantage. The following job about which Mr. Schaller writes is only one of the many that his taps and dies and drills have helped him to do.

The multiple bevel gear which drives the apron on this Kemp spreader, had a small hole drilled at the hub for oiling. This hole was generally filled with dirt, and often on the under side when oiling time came. I re-drilled it with an $\frac{11}{32}$ " drill, then tapped it with a $\frac{1}{8}$ " pipe tap and screwed in a grease cup which works fine.

VIRGINIA FARMER REPAIRS STEAM GAUGE

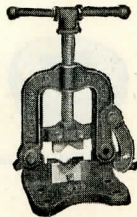
Reversed Pipe Die Permits Close Thread

When cutting a thread close to a shoulder it is necessary to reverse the die in the stock. Here is a letter from Mr. E. H. Bower of Midland, Virginia, explaining a threading job which saved him the price of a new steam gauge and prevented shutting down his boiler for any length of time.

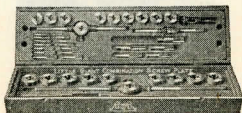
I broke a water connection where the gauge screws into boiler. By filing off the hexagon part intended for wrench grip I used an adjustable pipe die, connection being too short to thread in the usual way. I took the die out of the stock and put it in lower side up. Then by holding the gauge connection in a blacksmith vise, threading same as any one would a bolt, I made a satisfactory job.



GTD
LINCOLN
Twist Drill
For Bit Brace



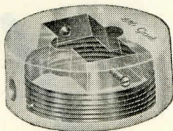
GTD Pipe Vise



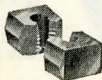
GTD "Little Giant"
Combination Screw Plate

HOW I FIXED IT

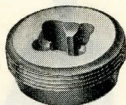
GTD



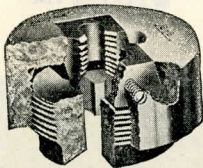
GTD "Little Giant"
Die Cap



GTD "Little Giant"
Die



GTD "Little Giant"
Die Guide



GTD "Little Giant"
Cap, Die and Guide
Assembled

ILLINOIS FARMER REPAIRS BOB-SLED TONGUE

**Saves Trip to Town and Blacksmith's
Bill**

Mr. Ben Dreyer, Route 3, Palatine, Illinois,
writes as follows:

Last winter I broke the rod that fastens the tongue to my bob sled. Instead of going to town and having a new rod made, I found an old rod that had been used on some other machine, but it was too long. I cut it off with a chisel and threaded it with my taps and dies, threading it on both ends. I then put a nut on each end and the job was done.

WORN THREAD PREVENTS PUMPING WATER

**Gasoline Engine Ignitor Repaired With
Oversize Bolt**

Mr. Ben Dreyer, Route 3, Palatine, Illinois, was able to save a good deal of time and work and also kept his water system going because he owned a set of taps and dies. Read what he has to say about it:

The ignitor on the gasoline engine that pumps the water on our farm had been causing me trouble, and I had to take it off several times. In working the bolts back and forth so many times I damaged the threads in one of the holes, so that the bolt could not be screwed up tight, and consequently there was a leakage around the ignitor. I drilled out this hole to a larger size, and re-threaded it with one of my taps. Then I made a bolt out of another bolt that was too long, and that was threaded with the wrong kind of thread. I cut the bolt above where the old threads were to make it the right length, and then re-threaded it, after filing the end to make it rounding to make it so the die would start easy. This did the job for me in fine shape.

HOW I FIXED IT



PRIMING CUP MAKES EASY STARTING ENGINE

Short Job with Drill and Pipe Tap

We want to add just one word of caution to this suggestion from Mr. Clark P. Schaller of Troy, New York. If your engine is water jacketed, don't tap through the water jacket. Find a solid place. Mr. Schaller says:

This engine was hard to start because it hadn't any priming cup in the ignitor block. So I drilled an $\frac{11}{32}$ " hole through the ignitor block, threaded it with a $\frac{1}{8}$ " tap, put in a short $\frac{1}{8}$ " nipple so that the angle priming cups could be screwed up without striking other ignitor parts. This makes priming easy and certain.



GTD
Pipe
Wrench

KEEPS PIPE WRENCH WITH SEPARATOR

Threshing Machine Equipment Not Complete Without One

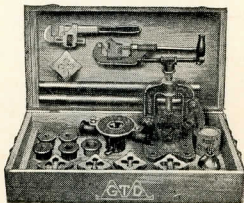
Mr. George G. McVicker of North Bend, Nebraska, outlines in the following letter numerous uses for this very useful tool.

You'll be interested whether you're a thresherman or not.



GTD
3 Wheel
Pipe
Cutter

When setting or springing the teeth of a threshing machine cylinder no tool is more handy than an 18" pipe wrench. It can be placed on some portion of the shaft between the pulleys and used like a ratchet wrench for turning while the position of the teeth are being watched. It will catch twisted teeth and spring them when the regular tooth bar will not or if placed on shaft and allowed to rest against the frame it makes a safety from being caught by the teeth if the steam valve is leaky or cylinder pressure of engine not released. Have a pipe wrench of sufficient size with the separator and profit by it, has been my experience.



Assortment A
GTD Pipe Tool Set

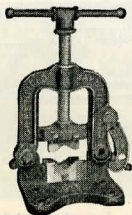
HOW I FIXED IT



GTD
Hand Tap



GTD
Burring Reamer



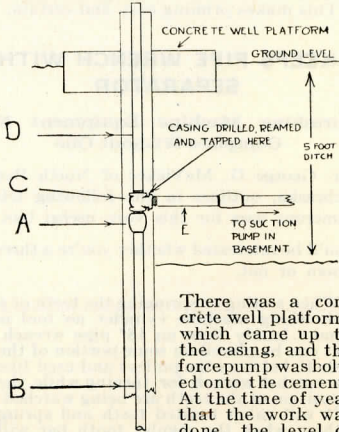
GTD Pipe Vise

IOWA FARMER INSTALLS SUCTION PUMP

Use of Drill, Reamer and Pipe Tap
Prevent Mason City Man's Pipe Line
From Freezing

Mr. Roger Kirk of Prairie Ridge Farm found it necessary to connect a pipe line through the side of his well-casing in order to pump water into his house. He explains how he did it:

I have installed a suction pump in a 5" well-casing in which there was already a force pump with a cylinder below. In this particular case, the electric suction pump was located in the basement of a house 50' away.

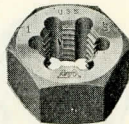


There was a concrete well platform, which came up to the casing, and the force pump was bolted onto the cement. At the time of year that the work was done, the level of the water in the casing was 4' below the top of the well, and we wished to put in a suction pipe below the freezing line, so we dug our ditch from the house to the well-casing 5' deep. We raised the force pump 3' and propped it up and had a man pump so as to lower the level of the water in the cas-

HOW I FIXED IT



ing. Then from the ditch we drilled a hole in the casing with a small drill and reamed it out with a pipe burring reamer to the correct size to tap with a 1" pipe tap. After this was completed the hole was plugged. We then fitted a vertical ball check valve (A) to a 12' length of pipe (B). A Tee (C) was then put on and another piece of pipe (D) long enough to reach to within a couple of inches of the top of the well-casing, when the Tee was even with the hole drilled in the well-casing. A 2' length of pipe (E) was then threaded with extra long threads, the plug removed from the well-casing and this piece of pipe screwed in a short distance and the end of it plugged. Then the piece of pipe with the Tee and check valve on it was lowered into the casing and the short piece of pipe screwed into the Tee after no little maneuvering. The pipe line to the house was then connected onto this and connected to the electric suction pump.



GTD "Hex" Die
For Re-Threading

WOOD BIT TOO SMALL FOR KING-PIN HOLE

Iowa Farmer Uses Burring Reamer

Mr. Roger Kirk, Prairie Ridge Farm, Mason City, says:

Last summer when I was fitting a new reach in a wagon I did not have a wood bit large enough to bore the hole in the front end of the reach for the king-pin, so I bored as large a hole as I could and enlarged it with a burring reamer.

GOOD RAINY DAY JOB

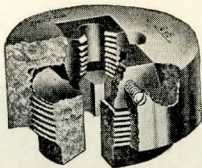
Ohio Farmer Gets Out His Screw Plate When Weather Man Says, "Rain"

Mr. W. A. Ladd of Hartville, Ohio, R. F. D. No. 2, suggests a good job for a rainy day. He says:

We now and then buy a truck box of old bolts and irons at a sale. Then rainy days we thread up the bolts and bars making different lengths and sizes. When we have a broken bolt or bar we are soon ready to go again. We have taps and dies for pipe cutting and they come in handy too.

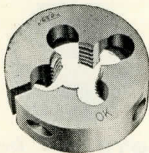


GTD
Repairman's
Taper Reamer



GTD "Little Giant"
Die, Guide and Collet

HOW I FIXED IT



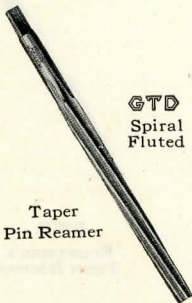
GTD "OK"
Drop-Forged Die

DO YOU USE A SPRAYER?

This Orchardist's Plan Saved Many A Dollar

If you raise fruit of any sort you undoubtedly have had the same experience with corrosion of pipe fittings that happened to Mr. H. P. Demarest, Director of Fruits, Orange County (N.Y.) Agricultural Society. His plan will save just as much time and money for you. Read it:

Lime-sulphur solution rapidly destroys the threads on the sprayer fittings. We are able to save many a dollar by cutting the threads on old parts as they are needed. The time saved by being able to effect these little jobs ourselves, being not at all the least important part of the thing.



GTD
Spiral
Fluted

Taper
Pin Reamer

YORK STATE FARMER MAKES STRONG DOOR HASP STAPLE

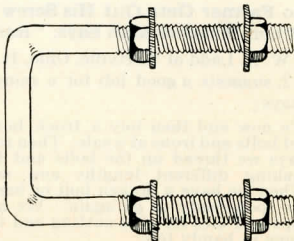
Bolts Instead of Driving It

Mr. H. P. Demarest sends us a good idea for an extra strong door hasp staple, to be bolted instead of driven into the door.

Here is a staple for use with door hasp that is better than driven type. Take five inch bolt and cut off head. Thread end cut. Bend to form of staple. Insert in door and put on nuts and washers as shown. If bolt is not at hand use $\frac{1}{4}$ " rod of proper length and thread both ends.



GTD "Hex" Die Set
For Re-Threading



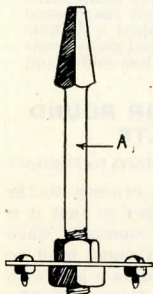
HOW I FIXED IT



HOW TO MAKE A VALVE GRINDER

By Albert Schmidt, Melvin, Iowa

The following description from Mr. Schmidt needs no further explanation. We are glad to print it just as it came to us.



A Ford Valve Grinder used with a Bit. "A" is an old bit which was useless being broken and as I needed a grinder I rigged this one. "A" is $2\frac{3}{4}$ " long threaded about $\frac{1}{2}$ " on the bottom, then I put on one burr then take a strap iron $\frac{1}{2}$ " wide and $1\frac{1}{2}$ " long and $\frac{1}{8}$ " thick, and drill a hole in center and tap a hole in whatever size "A" should be. Mine is a $\frac{1}{4}$ " and screw on "A" and put burr on bottom as shown, then drill two $\frac{3}{16}$ " holes $\frac{3}{4}$ " apart being careful each is correct distance from the center. Then fit in 2 stove bolts. File the stove bolts a little pointed, not very much, as they will shy out of the holes in the valve if too pointed. Several straps can be made to fit different valves. I have used one like this for some time with splendid results. Without Taps and Dies it would be impossible to make this.

NUT REPLACED ON PLOW DOUBLETREE

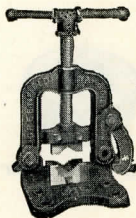
Texan Turns to Tap, When Nut Is Lost

The loss of a nut did not annoy Mr. C. B. Warren of Waco, Texas, who owns and uses a screw-plate. In spite of the fact that he could not find another nut of the proper size he soon had his plow doubletree ready to use again.

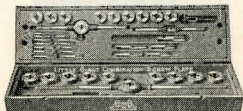
A $\frac{7}{16}$ " nut was lost from a plow double-tree. None could be found in the shop or scrap heap. One was tapped from a $\frac{7}{16}$ " blank. A vise and a $\frac{7}{16}$ " tap were used. We usually intend to have threaded nuts on hand.



GTD
LINCOLN
Twist Drill
For Bit Brace



GTD Pipe Vise



GTD "Little Giant"
Combination Screw Plate

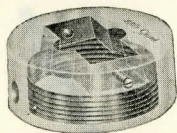
HOW I FIXED IT



GREASES GRAIN GRINDER

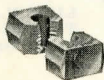
Used to Use Oil

The grain mill of Mr. Charles A. Bukove, Agua Fria, New Mexico, threw oil from its bearings into the ground grain. Read how, with his drill and tap, Mr. Bukove overcame this trouble.



GTD "Little Giant"
Die Cap

We have a small grain grinder that had small oil holes and required oiling often and oil would leak out on the ground grain so I drilled and tapped a $\frac{3}{16}$ " hole in the oil holes and screwed grease cups in place. This required less oiling and trouble.

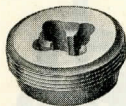


GTD "Little Giant"
Die

PIPE WRENCH FOR ROUND HEAD BOLTS

Rusty Nuts Frequently Hard to Remove

Bolts and nuts which are exposed to the weather usually rust together so that it is difficult to separate them especially when the bolt happens to have a round head on which it is impossible to obtain a grip with an ordinary wrench. In this event Mr. Herman F. Dorwald, Jr., of Harrisburg, Pennsylvania, relies on his pipe wrench and it always makes them "come to time" as he says.



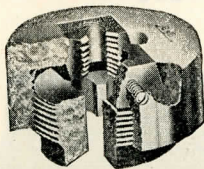
GTD "Little Giant"
Die Guide

It is true that a good pipe wrench is one of the most useful tools anyone can own as it can be used anywhere a monkey wrench would go and on many other jobs besides.

RADIATOR AIR VALVE TEARS CLOTHING

Farmer Changes Location

Mr. Clark P. Schaller of Route No. 4, Troy, New York, finds good use for his repair tools in his home as well as on the farm. This suggestion could be used to advantage frequently.



GTD "Little Giant"
Cap, Die and Guide
Assembled

The hot water heating radiator in one of our rooms stands so close to a door,

HOW I FIXED IT



that the air valve which was put in that end of the radiator was very much in the way when using that door. I drilled an $\frac{11}{32}$ " hole in the other end of the radiator, threaded it with a $\frac{1}{8}$ " pipe tap, changed the air valve to that end, put a $\frac{1}{8}$ " plug in the old hole, sawed off flush with a hack saw, and the bother was over.

FEW MINUTES' JOB SAVES WEEK'S DELAY

Tap Handy, So Planting Not Hindered
Long

It was simple to replace the special screws lost out of his tractor magneto with standard cap screws because Mr. W. E. Campbell of Murdock, Illinois, had a set of GTD Taps and Dies in his work shop. He writes:

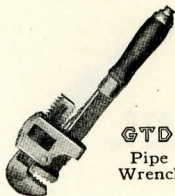
While planting corn this spring, my tractor stopped, and I found the screws holding the magneto together had lost out allowing it to spread apart. They were not standard size screws and no garage could supply new ones. To order new ones meant a delay of a week or more. With a Greenfield tap I re-threaded the holes, so I could use standard cap screws.

RADIATOR PETCOCK HARD TO REACH

New England Farmer Uses Pipe Tools

The following letter from a Massachusetts man who asks us to withhold his name, describes how he arranged the drain cock on his automobile radiator so that he could reach it without crawling under the car. He writes:

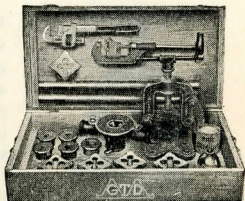
I had not drained the water from my car for the three months I had used it. Then we had a sudden cold spell and I discovered that the only way I could reach the petcock was to get under the car with a pair of long-handled pliers. I then decided to fix things so I could drain the radiator with less trouble, which I did by removing the petcock, threading a short piece of pipe and reconnecting pipe and petcock with a coupling. Then I was able to reach the petcock from in front of the car.



GTD
Pipe
Wrench



GTD
3 Wheel
Pipe
Cutter



Assortment A
GTD Pipe Tool Set

HOW I FIXED IT



THUNDER STORM THREATENS AS FARMER REPAIRS HAY CARRIER

Screw Plate Saves Hay Crop

"It was on a hot, sultry, August afternoon last summer that one of the hooks that supports my hay carrier broke and let the rail down," says this Wayne County farmer. "It was at the front end of the barn so I did not want to take a chance on unloading with the carrier until I fixed it.

Here is How I Went About It

I first took down the broken part to go by. Then I picked out a piece of $\frac{3}{4}$ " rod taken from an old silo band and cut a thread on one end of it with a die from my screw plate. (When I came to cut this thread, I opened up the die a little so it would cut large because I found that a tap of the same size made a very loose fit in the nuts I was going to use.) Then I bent the other end of the rod the same as the broken one and replaced it in the barn.

The whole job took me only half an hour and we were able to get our hay in before the storm broke. It rained all next day so I figure my screw plate paid for itself on that job alone."

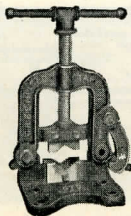
(This farmer's letter mentions a good feature of the GTD line of screw plate dies and that is, their easy adjustment. The job just described could have been done with a non-adjustable die, but it would not have been a permanent one because he tells us the thread in the nuts was large. Consequently the thread cut by a solid die would not make a tight fit. With his adjustable die he was able to cut just the size thread he needed.—EDITOR.)



GTD
Hand Tap



GTD
Burring Reamer



GTD Pipe Vise

HOW I FIXED IT

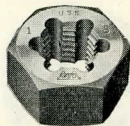


MAKES GAS TANK FILLER CAP

Engine Tank Tapped for Pipe Plug

Mr. Clark P. Schaller, Route No. 4, Troy, New York, substituted a pipe plug for a wood plug in the filler neck of his stationary engine. He used a pipe tap from his repair tool equipment to do the work.

The filler neck to the gas tank in my stationary engine was plugged with a wooden plug and let water in the tank when it rained, or was spilled around the engine. The neck and tank are cast integrally with the engine base. I threaded this hole with a $\frac{1}{2}$ " pipe tap and now use a $\frac{1}{2}$ " pipe plug to close it.



GTD "Hex" Die
For Re-Threading

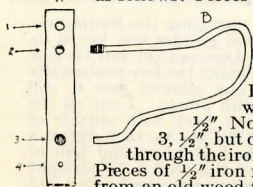
HOOKS FOR HEAVY HARNESS

Nebraska Farmer Gives Directions for Making

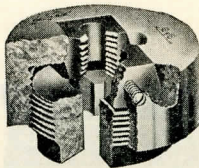
If you want some extra strong and substantial harness hooks, follow these directions sent in by Mr. George G. McVicker of North Bend, Nebraska, and you'll never have to think of harness hooks again. They'll last a life-time.

The harness hooks in my barn I made as follows: Pieces of $\frac{3}{8}$ " x $1\frac{1}{2}$ "

strap iron as (A) were cut from an old wagon tire 12" long. Hole No. 1 was drilled $\frac{1}{2}$ ", No. 2, $\frac{7}{16}$ ", No. 3, $\frac{1}{2}$ ", but only half way through the iron. No. 4, $\frac{1}{4}$ ". Pieces of $\frac{1}{2}$ " iron rod were cut from an old wood tank rod 36" long and threaded at one end. With an 18" pipe wrench they were bent as at (B) then the hole No. 2 was threaded and the end of hook screwed in. When up tight the lower end was slipped in the partly drilled hole No. 3. A $\frac{3}{8}$ " lag screw holds the top of the bracket to studding, and 20 cent spike is driven in the lower hole.

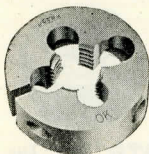


GTD
Repairman's
Taper Reamer



GTD "Little Giant"
Die, Guide and Collet

HOW I FIXED IT



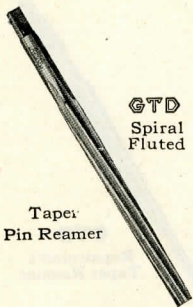
GTD "OK"
Drop-Forged Die

PREVENTS FLOODING MIXING VALVE

"Flashboards" Save Gas

The mixing valve on this stationary engine had a rather shallow bowl and the gas frequently slopped over and was wasted. Mr. C. P. Schaller, Route No. 4, Troy, New York, was determined that this waste should be stopped, and with the help of his tools was able to do so. The following description explains how he went about it.

The tank of the carburetor on this engine generally overflowed and this wasted gas. I threaded the opening with a 1" pipe tap, screwed in a 1" x 3" pipe nipple which made the tank high enough to stop the gas from slopping out.



GTD
Spiral
Fluted

Taper
Pin Reamer

WORN GEAR SLIPS OUT OF MESH

Feed Grinder Refuses to Operate

Loose gears don't always slip out of mesh as this one did but they are always noisy and sooner or later cause trouble.

Mr. George G. McVicker of North Bend, Nebraska, tells how he tightened such a gear.

A gear wheel operating the feeding device on my feed grinder was keyed on with a regular tapering key but became worn, so as to make the key continually become loose and allowed gear to slip out of mesh with pinion. I cut off the end of the shaft flush with outside of wheel, left the flat key in, then drilled a hole cutting half of wheel and half of shaft. I tapped this with a $\frac{3}{8}$ " straight tap and screwed in a steel set screw and the trouble was ended.

(We would suggest using three $\frac{1}{8}$ " taper pipe plugs instead of one set screw, however, so that you can readily center the gear on the shaft. One set screw will throw a worn gear out of true unless care is taken.—EDITOR)



GTD "Hex" Die Set
For Re-Threading

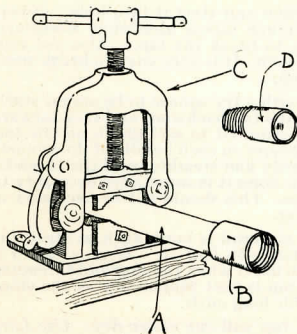
HOW I FIXED IT



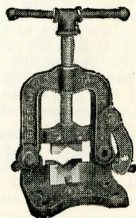
IOWA FARMER MAKES CHEAP PIPE NIPPLE CHUCK

Uses Pipe Cutter, Wrench and Stock
and Die to Good Advantage

Mr. Roger Kirk, Prairie Ridge Farm, Mason City, needed some pipe nipples but had no nipple chuck. Did that annoy Mr. Kirk? Not a bit of it. He got out his Pipe Cutter, Wrench and Stocks and Dies, took them over to his work-bench and set about making a nipple chuck. This is how he tells it:

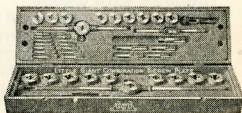


GTD
LINCOLN
Twist Drill
For Bit Brace



GTD Pipe Vise

A handy tool for making short nipples may be made in the following manner: by cutting off a short length of pipe (A) 1' thread long enough to screw a pipe coupling (B) on to within 5 threads of the opposite end, by placing this nipple chuck in a vise (C) a person can make their own nipples any desired length by cutting off a piece of a pipe (D), thread it at one end, and screwing that end into the nipple chuck as far as it will go, and then cutting threads in the usual manner by using the size die required and the next largest size collet.



GTD "Little Giant"
Combination Screw Plate

REPAIR KINKS

HOW TO USE A TAP

First, refer to the tap drill charts on pages 104 to 107 and select a drill of the proper size for the kind of thread you want to cut, whether it is United States Standard, S. A. E. Automobile standard, or Briggs Pipe Standard. Sometimes the tap shank has the drill size stamped on it.

If you haven't a drill of the proper size, use the nearest size to it. Always being sure that the drill leaves enough stock so the tap will cut a good deep thread.

The sizes indicated in the drill charts are figured for cutting a 75% depth of thread. A full 100% depth of thread is only 5% stronger and takes three times as much effort to cut. Even a 50% thread will break the bolt before it will strip. Be careful to drill the hole true, and a little deeper than the length of your bolt thread.

Second, place tap in tap wrench and start it into hole. (Never use an S-wrench or monkey-wrench unless absolutely necessary. The one-sided pressure is likely to break the tap.) Also use your judgment about the size tap wrench. It is very easy to break small taps by using a large tap wrench.

When starting the tap try it with a try square to be sure it starts straight. If not quite true, turn the tap backward and then forward again pressing in the direction required to straighten on the forward stroke only, using even pressure on each handle of the wrench. After it is straight, turn it in slowly and steadily until the thread is cut far enough. In tapping deep holes it is sometimes necessary to back out and clean out the chips. This should not be necessary in holes of ordinary depth, however.

During the operation, if the material is hard, such as steel, the tap should be frequently squirted with *lard* oil. Keep a can of it near your work bench so you can use it when tapping and threading steel and wrought iron. Cast iron is best tapped dry as the chips crumble readily and do not form long curls.

Never use machine oil. Any tap will cut easier dry. *Use Lard Oil.*

HOW TO USE A DIE

Most dies are used in a two-handled die-stock which is generally equipped with a guide.

When threading a rod place the piece to be threaded upright in a vise and file off any burrs or projections on the end to be threaded. Place the die with the guide part down making sure that you are starting straight and then apply pressure until the die catches.

When the die has caught it will be well to see if you are starting straight and if not, turn backward a little as in tapping and then straighten on the forward stroke again.

Do not use too much force when threading but use plenty of lard oil and if the die sticks, back off a little, which will loosen the chips and in starting over again the die will work much easier.

REPAIR KINKS

HOW TO MAKE A TAP CUT OVERSIZE

1. Pack the flute or groove with cotton waste or a piece of rag before tapping.
2. Place a thin strip of copper or brass over one cutting land.
3. Place the tap in boiling water and cut the thread while the tap is still hot.

Of the three methods, the first is most generally used and is most successful.

HOW TO REMOVE A BROKEN STUD

The best method of removing a broken stud or screw is by drilling and using a special left-hand drill called the "Ezy-out" which is made by a well known manufacturer. Or else by making a special hardened tool similar in shape to a file tang which is used in the same way. Another method is to pour kerosene around the stud which will penetrate between the threads and if this is allowed to remain for a little while the stud will be easy to remove. If a piece of the broken stud protrudes from the hole the broken part may be removed with a diamond point chisel and a hammer. If it still does not move, use a center punch to spot the center of the screw and drill it out, using a drill smaller than the size of the thread. The hole should then be cleaned out with a tap the same size as the thread.

In case of a hardened set screw, heat with a blow torch.

If the broken part projects, saw or file a slot and use the screw-driver.

HOW TO REMOVE A TIGHT NUT

1. If the nut cannot be started with a wrench, try heating it. (Don't heat too much if it is near a bearing.)
2. Pour kerosene on the nut and bolt and let them stand for about an hour.
3. If the nut will not budge after the above methods have been tried split it with a chisel and if care is used the threads of the bolt can be saved. If the threads are injured at all a die should be run over the part before it is reassembled.

HOW TO MAKE A STRIPPED NUT HOLD

In some cases where the thread is a comparatively fine one, trouble is experienced by the nut stripping, and one method of overcoming this is to reline the nut uniformly with soft solder started on the bolt and working it down on the thread a little at a time and this will cut a new thread inside the nut.

REPAIR KINKS

HOW TO FIND THE PITCH OF A SCREW WHEN A THREAD GAGE IS NOT AT HAND

Put an ordinary mechanic's scale on the screw so that the end of the scale is opposite the top point of a thread, and count the number of spaces under the scale between the threads for a distance of one inch. For example; if there are sixteen spaces underneath the scale in one inch the screw is one-sixteenth pitch, or sixteen threads per inch.

HOW TO FIND A TAP DRILL SIZE WITHOUT A TAP DRILL CHART

While it is better to use the tap drill charts (pages 104 to 107) whenever possible, cases will occur where these are not available and the methods mentioned below can be used.

1. Take the die that is to be used or one that is the same size as the tap which you are to use and try the different drills in the die until one is secured which is a sliding fit. Then take the next larger size and this will be near enough for all practical purposes. Do not use a drill which goes through the die freely, as this will drill a hole too small and the tap would have too much metal to take out and would probably break.
2. Another method is to take a pair of spring calipers with sharpened points and measure the diameter of the tap at the bottom of the thread, in other words the core diameter. Measure this off on a scale and take a little larger size drill.

HOW TO THREAD A U-BOLT OR SPRING- SHACKLE BOLT

Where the distance between the two arms of a U-Bolt do not permit the arms of the die stock to pass, it is advisable to use a bit-brace holder for round dies or the bit-brace attachment which is included in the GTD "Little Giant" Screw Plate.

HOW TO MAKE A SCREW HOLD IN SHEET METAL

Select a punch with a sharp point and long bevel with the shank the same diameter as indicated in the tap drill charts, pages 104 to 107. Place the metal over the hardie-hole in the anvil or on a nut of medium size and drive the punch into it at the desired point. This will make a short cylinder in which to tap and the thread will be sufficiently strong to hold a small screw.

HOW TO KEEP YOUR FILES SHARP

To sharpen dull files put them in a dilute solution of sulphuric

REPAIR KINKS

acid and leave them there until they are eaten deep enough. 24 parts of water to 1 part acid is about the right proportion.

HOW TO MAKE A PERMANENT THREADED JOINT WITHOUT WELDING

Frequently it is desirable to make a permanent joint which cannot possibly work loose. The use of a paste made of the following ingredients will make a "rust" joint by oxidizing or rusting together the parts to be joined.

If liberally applied and allowed to set, such a joint will never separate without fracturing the parts. Here is the recipe:

80 parts cast iron borings or filings
1 part of sal-ammoniac
2 parts of flowers of sulphur

Mix ingredients with water into a paste and daub on with a wooden paddle. Keep it off your skin!

This mixture should be used at once. Mix only enough cement for each job.

DON'TS

Don't leave nuts or bolts lying around on the floor after a job is done—put them in a box or a pan which should be kept for the purpose. If you are careless in leaving parts around you may some day drop or leave a nut in a crank case or even in a transmission or forget to put on a lock-nut or lock-washer—BE TIDY.

Don't leave your taps and dies around on the bench, put them back in the screw plate box in their proper place—ready for the next job without having to hunt around for the size you want. If you haven't one, rig up some slots in a box for your miscellaneous taps and dies so as to keep them together.

Don't hit the end of a shaft or bolt with an ordinary hammer unless you break the force of the blow with a piece of brass or wood—*it is better practice to use a lead or babbitt hammer.*

Don't use a Monkey Wrench on a $\frac{5}{16}$ " nut.

Don't use a Pipe Wrench on a nut if it is possible to use a Nut Wrench—it wears the corners of the nuts.

Don't put wrenches, hammers, chisels or tools of any kind on car fenders or seat cushions—much better to cover the fenders and remove the cushions while working.

Don't use a large Tap Wrench to turn a small tap—the leverage will be too great and broken taps cost money.

Don't put your greasy hands on the varnished surfaces of a car when pushing it around the garage—if you haven't time to wipe your hands use a piece of dry waste between your hands and the car.

Don't forget your overall may be greasy—if you have to sit on the cushions in a car better spread a newspaper to sit on.

Don't leave a car standing in a pool of oil or grease—it won't improve the tires.

GET YOUR MONEY'S WORTH

Tested seed has been the means of improving many a farmer's crops just as registered bulls in every herd would mean a great increase in the value of dairy stock. Both are modern ideas—approved by up-to-date farmers who know by experience that it is expensive to save a little in the planting and then lose a lot in the harvest.

The same argument applies to tools.

The man who insists on getting the best there is when fitting up his shop, buys for a generation.

The man who buys cheap tools keeps buying and spends more money in the long run without getting as much satisfaction.

We have made and used tools for almost three generations and our advice to every tool user is:

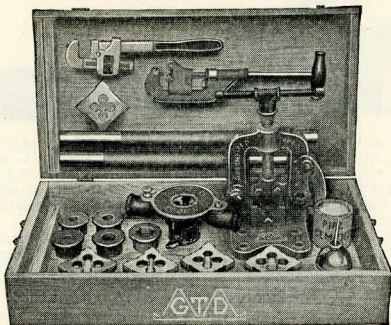
“Buy *the best* tools you can get and put them to work. They'll pay you back, in time and money saved, many times their original cost. You'll never make a better investment.”



This mark on small tools is like
Sterling on silver—

The mark of the standard of excellence.

GTD PIPE TOOL SET



Assortment "A"

This is the set we recommend for the average farmer and contains all of the tools necessary to do practically all pipe jobs mentioned in the previous pages. Every tool in the set is of good quality material and workmanship. The hardwood chest which is furnished free provides a good place to keep the tools where they can always be found and prevents losing parts.

GTD Pipe Tool Assortment "A" contains the following tools:

1 Set No. 1 "OK" stock and 5 Drop-Forged Steel Dies cutting $\frac{1}{4}$ ", $\frac{3}{8}$ ", $\frac{1}{2}$ ", $\frac{3}{4}$ " and 1" pipe threads, with 5 sizes of bushing guides to match.

14" **GTD** Pipe Wrench (Stillson pattern) with forged steel jaws and handle. Handles pipe $\frac{1}{8}$ " to 1 $\frac{1}{2}$ " diameter.

1 No. 1 **GTD** 3-Wheel Pipe Cutter with solid drop-forged steel frame and two interchangeable rollers for changing into a 1-wheel cutter.

1 No. 1 Hinged Pipe Vise made extra heavy of malleable iron. Reversible to open from either side. Capacity, $\frac{1}{8}$ " to 2 $\frac{1}{2}$ " pipe.

1 Nickle finish, heavy gauge, Lard-Oil Can with spring steel bottom.

1 Large can of Pipe Joint Cement with air-tight top.

Packed complete in well finished, substantial hardwood chest fitted with handles, hinged cover and cover hooks.

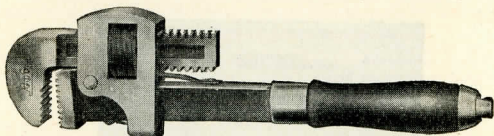
List Price \$23.50 Freight extra.

(Larger and smaller sets at corresponding prices.)

Ask your hardware or implement dealer. If he can't supply you, write direct, giving us his name. Use the Order Blank.

THIS IS THE GTD PIPE WRENCH

Furnished with Assortment "A" Pipe Tool Set



A good pipe wrench such as this GTD Forged-for-service Model is one of the first repair tools a farmer should buy. It can be used wherever a monkey wrench will go and in many other places, too.

The GTD Pipe Wrench is made of a special formula of steel, drop-forged and heat treated. In tests with other makes of wrenches it has in every case proven itself strongest.

Most piping used on the farm runs 1" diameter or smaller. The Pipe Wrench furnished with Assortment "A" is a 14" size suitable for pipe up to 1½" diameter and will answer the majority of pipe wrench requirements on the average farm. Of course, any farmer who has a complete repair equipment will need two other wrenches, a small 6" or 8" wrench for working around his car or tractor or in cramped quarters, and a large 18" wrench for heavy work.

Every GTD Pipe Wrench is tested before shipment.

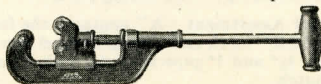
Sold separately, wrapped in oiled paper and packed for shipment to you. Choice of wood, forged-steel or hollow metal handle.

6" GTD Pipe Wrench	List Price \$2.00	Parcel
14" GTD Wrench	" " 3.50	Post,
18" GTD Pipe Wrench	" " 5.00	extra

(Other sizes of GTD Pipe Wrenches at corresponding prices.)

THIS IS THE GTD PIPE CUTTER

Furnished with Assortment "A" Pipe Tool Set



A "One and Three" Wheel Pipe Cutter, patented January 4, 1916.

Like the famous GTD Pipe Wrench, this combination pipe cutter has extra heavy drop-forged steel parts. Frame is *not* malleable iron.

There are no screw threads cut in the frame to strip and spoil the whole tool. Instead there is an inserted hardened tool steel nut which will outlast the cutter.

The slide is continuous without a break. This affords the yoke a full support at all times and does away with sticking and catching while cutting.

Every farmer who does any work on piping needs this GTD Combination Pipe Cutter. With three cutters it will cut off a pipe in a corner or close to a wall where it is impossible to swing the cutter around the pipe. Changed to a one-wheel cutter, it rolls the pipe ready to be threaded with a die.

Size furnished with Assortment "A" cuts ⅛" to 1¼" Pipe.

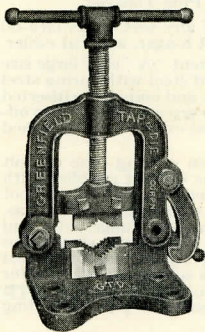
Sold separately, wrapped in oiled paper and packed for shipment.

List Price \$4.50. Parcel Post extra. (Other sizes of GTD Combination Pipe Cutters at corresponding prices.)

Ask your hardware or implement dealer. If he can't supply you, write direct, giving us his name. Use the Order Blank.

THIS IS THE GTD PIPE VISE

Furnished with Assortment "A" Pipe Tool Set.



The ordinary machinists' or carpenters' vises are neither of them suitable for holding pipe. Every farm repair shop needs a GTD Pipe Vise on one end of the work bench and this tool is one of the first to obtain if any work on pipe is to be done.

A heavy malleable iron frame is used and is made so strong that it is possible to leave off the apron that other pipe vises need to strengthen them. This permits fastening the vise anywhere on the bench or post and not just on the edge.

The holes in the base of the GTD Hinged Pipe Vise are so placed that there is ample room to allow the use of an ordinary pipe wrench when bolting down to bench or post.

Every GTD Pipe Vise is reversible. It can be opened to take pipe from either side. A heavy hook locks the vise closed after pipe is in position.

The Jaws are made of excellent tool steel carefully hardened and tempered and are bolted securely to the frame and slide.

The vise furnished with Assortment "A" has a capacity of $\frac{1}{8}$ " to $2\frac{1}{2}$ " pipe.

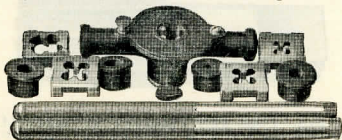
Sold separately, it comes to you carefully packed.

List Price \$5.00 Parcel Post extra.

(Other GTD Combination Pipe Vises at corresponding prices.)

THIS IS THE SET OF "OK" STOCKS AND DIES

Furnished with Assortment "A" Pipe Tool Set



Here is the pipe threading equipment we recommend for pipe fitting and repair work on the average farm. It consists of a stock with 5 "OK" drop-forged square pipe dies and bushing guides to match.

"OK" dies are forged with spaces in the back for chip clearance and oiling. Forging toughens the steel and makes the dies cut easier.

If you already have square pipe dies of some other make, size $2\frac{1}{2}$ " x $2\frac{1}{2}$ " x $\frac{3}{4}$ " you can use them in the "OK" stock which comes with Assortment "A".

Sold separately, "OK" Stocks and Dies are carefully inspected, wrapped in oiled paper and packed in a plain, hinged cover, wood box.

List price, $\frac{1}{4}$ ", $\frac{3}{8}$ ", $\frac{1}{2}$ ", $\frac{3}{4}$ ", 1" — \$10.50. Parcel Post extra.

(Other GTD "OK" Stocks and Dies for Pipe at corresponding prices.)

Ask your hardware or implement dealer. If he can't supply you, write direct, giving us his name. Use the Order Blank.

LARD-OIL CAN AND PIPE JOINT CEMENT

Furnished with Assortment "A" Pipe Tool Set

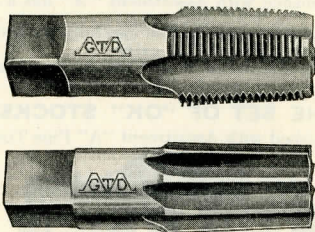
Every man who uses a threading tool of any sort needs lard-oil for a lubricant. It makes taps and dies last longer, and cut easier.

The oil-can furnished with **GTD** Assortment "A" is of large size and made of first quality heavy gauge rolled steel with spring steel bottom and heavy gauge spout. Both spout and body have inserted cut steel threads, not the ordinary pressed groove kind. This oil-can sells separately for 50 cents. Parcel Post extra. It is furnished free with Assortment "A".

Another good thing to have handy when cutting pipe or bolt threads is a can of Pipe Joint Cement. The cement supplied with Assortment "A" is equal to about $3\frac{1}{2}$ pounds of red lead, will not harden, and will make perfectly tight joints for steam, water, gas, etc. It can also be used for coating metal gaskets, flanges, etc., and prevents rusting and sticking if used upon bolts, nuts, screws and other thread parts. Joints coated with this cement may be opened years after they were made. This cement is sold in pound cans for 35 cents per can. Parcel Post extra. It is furnished free with **GTD** Pipe Tool Set—Assortment "A"—the complete pipe threading outfit.

SETS OF **GTD** PIPE TAPS AND REAMERS

In sizes corresponding to Assortment "A"



GTD Taper Pipe Taps and Reamers are made of selected crucible tool steel and are machine relieved like the **GTD** Hand Taps described on page 97.

Pipe taps are used on the farm in many ways mentioned in the foregoing letters. Not only for pipe-fitting, but also for attaching grease cups and inserting plugs, etc.

Pipe Taps are tapering and the hole should be reamed out with a pipe reamer before tapping. **GTD** Pipe Taps and Reamers can be supplied in sizes corresponding to Assortment "A" namely, $\frac{1}{4}$ ", $\frac{3}{8}$ ", $\frac{1}{2}$ ", $\frac{3}{4}$ ", 1" for \$24.00 per set, list price.

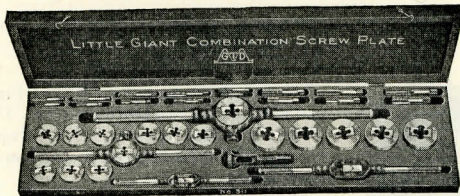
Taps or Reamers alone \$12.00 per set, List Price, or separate taps or reamers as follows:

$\frac{1}{8}$ ".....	\$1.00	$\frac{3}{8}$ ".....	\$1.60	$\frac{3}{4}$ ".....	\$2.80
$\frac{1}{4}$ ".....	1.20	$\frac{1}{2}$ ".....	2.00	1".....	4.40

All prices given are list prices with Parcel Post extra.

Ask your hardware or implement dealer. If he can't supply you, write direct, giving us his name. Use the Order Blank.

SCREW-PLATE



Cuts Both USS (Common Standard) and SAE (Automobile Standard) Threads

Practically all threading jobs mentioned in the foregoing pages required the use of taps or dies between $\frac{1}{4}$ " and $\frac{3}{4}$ " diameter. These are the sizes generally used in farm implement parts. With very few exceptions these threads are United States Standard (USS) in form and number of threads to the inch. The exceptions are usually SAE Standard threads, the same as used in automobiles, trucks, tractors, farm lighting plants and other places where finer threads are desirable.

Therefore the best set of taps and dies for the average farmer to own is a combination USS and SAE set cutting from $\frac{1}{4}$ " to $\frac{3}{4}$ ". In other words, GTD "*Little Giant*" No. 311 Screw-Plate.

This assortment contains eight sizes of taps and dies of each thread standard, sixteen tools in all. It also has two die-stocks, two tap wrenches and a bit-brace shank guide for threading in a limited space such as around a machine, threading a U-bolt and other similar jobs.

Like all GTD screw-plates this No. 311 "*Little Giant*" set is put up in a nicely finished hardwood chest with separate compartments for each tool.

When packed for shipment each tool is well oiled and wrapped in oiled paper as protection against rust.

No. 311 "*Little Giant*" Combination Screw-Plate cuts 8 sizes

USS $\frac{1}{4}$ ²⁰, $\frac{5}{16}$ ¹⁸, $\frac{3}{8}$ ¹⁶, $\frac{7}{16}$ ¹⁴, $\frac{1}{2}$ ¹³, $\frac{9}{16}$ ¹², $\frac{5}{8}$ ¹¹, $\frac{3}{4}$ ¹⁰

SAE $\frac{1}{4}$ ²⁸, $\frac{5}{16}$ ²⁴, $\frac{3}{8}$ ²⁴, $\frac{7}{16}$ ²⁰, $\frac{1}{2}$ ²⁰, $\frac{9}{16}$ ¹⁸, $\frac{5}{8}$ ¹⁸, $\frac{3}{4}$ ¹⁶

List Price \$56.00. Freight extra. Weight 31 lbs.

(Larger and smaller sets at corresponding prices.)

Ask your hardware or implement dealer. If he can't supply you, write direct, giving us his name. Use the Order Blank.

THE GTD *Little Giant* DIE

(Patented February 23, 1915.)

The famous "*Little Giant*" die is used in No. 311 "*Little Giant*" Screw-Plate

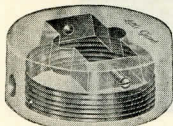


Fig. 1, Cap

The die proper is in two pieces (Fig. II); each half having two cutting edges. The die can be easily and quickly removed from the cap and the cutting edges sharpened on a thin emery wheel.

The die is held in a cap (Fig. I.) The edges of the die are bevelled to the same angle as the bevelled edges of the slot in the cap. A small screw at each end of the slot enables the workman to adjust the halves to the exact size.

The die is bevelled on both sides to permit reversing the die so that work may be threaded either through the guide or from the face, determined by the character of the work.

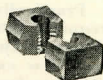


Fig. II, Die

After the die is laid in the slot in the cap, a screw-guide (Fig. III) wedges it tight. The die is thus held in a three-angle grip, the surest grip known to the science of mechanics. It cannot tilt out of alignment.

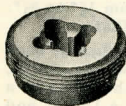
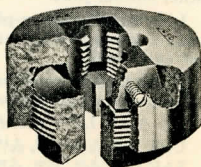
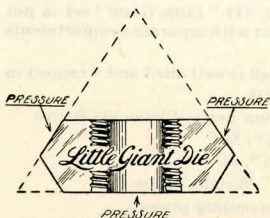


Fig. III, Guide

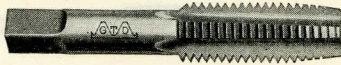
When the screw-guide is tightened, the whole (die, cap and screw-guide) becomes practically a solid die, possessing all the rigidity of a solid piece of metal. Yet it is easily taken apart, the die sharpened, and re-assembled.



GTD "*Little Giant*"
Cap, Die and Guide
Assembled

Ask your hardware or implement dealer. If he can't supply you, write direct, giving us his name. Use the Order Blank.

GTD MACHINE RELIEVED HAND TAPS



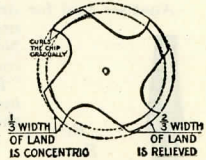
The taps furnished in No. 311 "*Little Giant*" Screw Plate are made differently from practically every other tap on the market. They have what is known as "Machine Relieved" threads.

The little diagram explains just what this means, the cutting edge and one-third of the land back of it are made full cutting size. The other two-thirds is cut down a trifle smaller so that it won't drag in the thread and make the tap work hard.

This form of relief permits repeated sharpening of the tap along the cutting edge without destroying the accuracy of the tool.

The ordinary method of relieving taps is to taper them toward the shank. But this style tap cuts under size after it has been sharpened a few times and does not cut as easily as the GTD Machine Relieved Tap.

GTD Hand Taps are made in all sizes cutting from $\frac{1}{16}$ " to $2\frac{1}{2}$ " in diameter. List prices of separate taps of the sizes included in the No. 311 GTD "*Little Giant*" Screw Plate are as follows:



$\frac{1}{4}$ ".....	\$.45	$\frac{3}{8}$ ".....	\$.55	$\frac{1}{2}$ ".....	\$.70	$\frac{5}{8}$ ".....	\$.90
$\frac{5}{16}$ ".....	.50	$\frac{7}{16}$ ".....	.60	$\frac{9}{16}$ ".....	.80	$\frac{3}{4}$ ".....	1.20

(Larger and smaller GTD Taps at corresponding prices.)

GTD BIT-BRACE SHANK GUIDES

For "*Little Giant*" Dies

The bit-brace shank guide furnished in No. 311 "*Little Giant*" Screw-Plate is an extremely useful tool as it makes possible the use of "*Little Giant*" dies in hard-to-get-at places, too cramped for an ordinary die-stock.

Frequently, the bit-brace shank can be used without taking the machine apart, thus saving a great deal of unnecessary time and labor. It is not unusual for a tool of this sort to save more than the cost of the whole screw-plate on a single emergency repair. Separately the GTD "*Little Giant*" Bit-Brace Shank Guide for No. 1, 2" diameter collet sells for fifty cents, list price. Parcel Post extra.

Similar guides for use with GTD Round Adjustable or "OK" Drop-Forged Round Adjustable Dies sell for the following list prices:

Outside diameter of die	$\frac{5}{8}$ "	List price	\$.75
"	"	"	"
"	"	"	1.00
"	"	"	1.50
"	"	"	2.75

Screw-Plates with which these bit-brace shanks, may be used are described in the following pages.



Ask your hardware or implement dealer. If he can't supply you, write direct, giving us his name. Use the Order Blank.

GTD TAP AND REAMER WRENCHES



The GTD Tap Wrenches furnished in No. 311 "Little Giant" Screw-Plate are of the "twist-handle" type in which the hardened tool steel jaws are closed by twisting one handle. The other handle and body are drop-forged from the solid bar, making an exceptionally strong and light tool that will hold its adjustment wherever set.

These tap wrenches are useful on taps, reamers and other square shank tools. In fact they are absolutely necessary to get the best results, as the balanced pressure of the two hands makes it possible to keep the tap or reamer straight and true.

Another tool for driving taps and reamers is also found very useful in farm repair work. That is, the GTD No. 335 Bit-Brace Tap Chuck, a tool which corresponds to the Bit-Brace Shank Guide for "Little Giant" or "OK" Dies. This chuck makes it easy to ream or tap holes in out-of-the-way places by using a ratchet bit-brace.



*Bit
Brace
Tap
Chuck
Nos.
334,
335*

The GTD "Twist-Handle" Tap Wrench comes in many sizes. The one for $\frac{1}{4}$ " to $\frac{3}{4}$ " hand taps and reamers and $\frac{1}{8}$ " to $\frac{3}{8}$ " pipe taps and reamers sells for \$4.00 list price. Parcel Post extra.

The No. 335 Bit-Brace Tap Chuck lists for \$1.00 plus Parcel Post.

In addition to the twist-handle and bit-brace types, GTD makes tap wrenches with T-handles and tap chucks with shanks suitable for use with round adjustable or "button" die stocks.

The T-handle wrenches are furnished with either long or short shanks and with solid or ratcheting handles.

Long shank wrenches are especially useful on machine repairs and are frequently used for tapping machine parts without dis-assembling.

The handle of the ratchet wrench slides either way from the shank to make an L-handle for tapping in corners or close to walls where it would be impossible to use any other type.

No. 339—Ratchet T-Handle Wrench $4\frac{5}{8}$ " long.

List price \$2.00. Parcel Post extra.

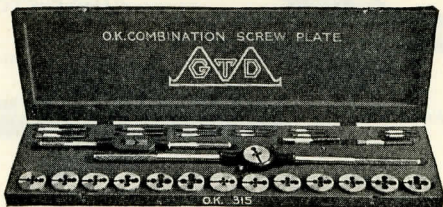
No. 337—Solid T-Handle Wrench $10\frac{5}{8}$ " long.

List price \$1.50. Parcel Post extra.

(Other sizes of these wrenches at corresponding prices.)

Ask your hardware or implement dealer. If he can't supply you, write direct, giving us his name. Use the Order Blank.

GTD No. 311 "OK" SCREW-PLATE

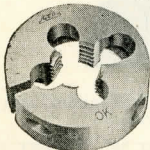


Cuts both USS (Common Standard) and SAE (Automobile Standard) Threads

This "OK" Screw-Plate contains the same sizes of taps and dies as the GTD No. 311 "Little Giant" Screw-Plate but the dies are of the "OK" drop-forged, round adjustable pattern.

The accompanying illustrations clearly show the advantages of this design.

In the first place, the back of the die has exceptionally large recesses allowing plenty of space for the chips to clear themselves and for oiling with lard-oil while threading. Another good feature of the "OK" die lies in the fact that it is forged—and every blacksmith and farmer knows that forging toughens steel and makes a mighty good cutting edge.



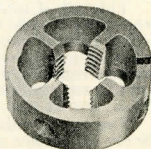
Front View

The "OK" die is also easily adjusted. An ordinary screw driver does the trick in short order.

We want to call your particular attention to the "OK" Adjustable Guide Stock which is regularly supplied in this set. This stock is shown in the pictures on the following page.

This little die-stock is one of the neatest and handiest of tools. Has a compact, chip-proof, adjustable guide and a positive locking device. No changing guides or bushings for different sizes with the "OK" stock. Just slip in a die, adjust the guide and cut your thread.

The taps, tap wrenches and screw-plate box are the same quality as supplied in the GTD No. 311 "Little Giant" Screw-Plate. All things considered, GTD No. 311 "OK" Screw-Plate is exceptionally good value for anybody—farmer or professional repairman.

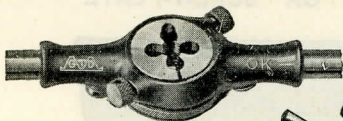


Back View

No. 311 "OK" Screw-Plate—List Price \$47.50. Freight extra.

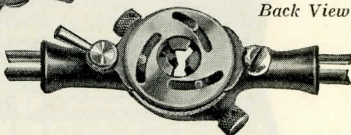
"OK" Adjustable Guide Die Stock, \$3.50. Parcel Post extra.

Ask your hardware or implement dealer. If he can't supply you, write direct, giving us his name. Use the Order Blank.



Front View

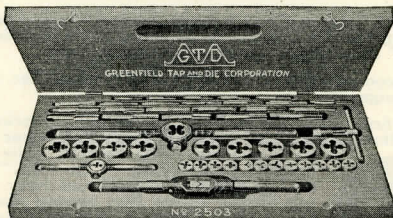
"OK" ADJUSTABLE GUIDE STOCK



Back View

Note Description of "OK" Stock on Preceding Page

GTD No. 2503 "BUTTON" DIE SCREW-PLATE A General Purpose Assortment



Cuts USS (Common Standard), SAE (Automobile Standard) and ASME (Machine Screw Standard) Threads

For general farm repair work in sizes not over $\frac{5}{8}$ " diameter it would be hard to beat the GTD No. 2503 General Purpose Screw-Plate.

This set of taps and dies is not as complete in some respects as the GTD "Little Giant" No. 311 or GTD "OK" No. 311. On the other hand it contains some taps and dies for cutting the common sizes of machine screw threads which are often used in cream-separators, lighting outfits and other small farm and dairy machines and in carburetors, magnetos, starters and generators on automobiles, trucks and tractors.

The round adjustable split dies contained in GTD No. 2503 Screw Plate are similar in form to the "OK" Drop-Forged Dies but are machined from solid steel bars instead of being forged to shape. They are made of excellent material and will give excellent service.

The taps and tap wrench supplied with this set are exactly the same as furnished in the "Little Giant" and "OK" Screw-Plates. There are none better.

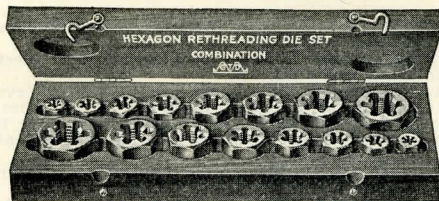
The list price of this set packed for shipment to you is \$42.00. Freight extra.

(Special sets with round dies for Ford cars at attractive prices.)

Ask your hardware or implement dealer. If he can't supply you, write direct, giving us his name. Use the Order Blank.

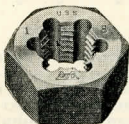
GTD "HEX" DIE SETS

Make Your Big Screw-Plate Last Longer



GTD Hexagon Die "Nuts" are designed for repair work only and are intended to re-thread rusty, bruised or battered threads to make them good as new.

Every mechanic knows how hard it is to start a nut true on a bruised thread. Frequently the nut starts on crooked and crosses and spoils the thread.



GTD "Hex" Die

The GTD "Hex" Die can be used with an ordinary monkey wrench or in a socket or any nut wrench of suitable size and quickly cleans up rusty or crossed threads so the nuts will run on easily.

The rust and grit on old threads is hard on any die and because the GTD "Hex" Dies are inexpensive to replace, and hardened especially for this work they are always recommended for re-threading jobs. They prevent wearing out your more expensive adjustable, screw-plate dies.

The illustration shows GTD No. 473 "Hex" Die Set cutting the same sizes of USS (common standard) and SAE (automobile standard) threads, as the No. 311 "*Little Giant*" and No 311 "OK" Screw-Plates. This "Hex" die set is a money-saving investment as a supplement to either screw-plate.

GTD No. 473 "Hex" Die Set contains the following cutting sizes: $\frac{1}{4}$ ", $\frac{5}{16}$ ", $\frac{3}{8}$ ", $\frac{7}{16}$ ", $\frac{1}{2}$ ", $\frac{9}{16}$ ", $\frac{5}{8}$ ", $\frac{3}{4}$ " USS, and $\frac{1}{4}$ ", $\frac{5}{16}$ ", $\frac{3}{8}$ ", $\frac{7}{16}$ ", $\frac{1}{2}$ ", $\frac{9}{16}$ ", $\frac{5}{8}$ ", $\frac{3}{4}$ ", SAE.

It comes to you in a well-finished hardwood case.

List price \$12.50. Parcel Post extra.

(Smaller "Hex" Die Sets from \$3.50, list price, up.)

Ask your hardware or implement dealer. If he can't supply you, write direct, giving us his name. Use the Order Blank.

GTD REPAIRMAN'S TAPER REAMER



The **GTD** Repairman's Taper Reamer is one of the most useful tools a farmer can own.

It will enlarge holes in steel, wood, hard-rubber, sheet metal; in fact, in nearly every material.

It will ream out threaded holes for larger bolts,—will even make the hole almost straight-sided if it is run in from both sides. If two holes do not quite line up so a screw or bolt will enter, the **GTD** Repairman's Taper Reamer will line them up. It frequently pays for itself on this one job alone.

With this tool it is possible to make a hole of any size in its range when a drill of the correct size is not at hand.

If necessary a $\frac{1}{8}$ " hole may be enlarged to any diameter up to 1" by using the set of two reamers listed below.

These reamers are carefully made of tool steel, hardened and tempered for hard use and may be sharpened repeatedly.

Farmers, automobile and bicycle repairmen, blacksmiths, threshermen, plumbers, machinists and the handy man around the place all find the **GTD** Repairman's Taper Reamer indispensable.

Comes in two sizes, separately or as a set.

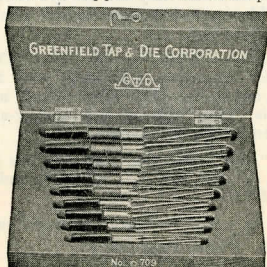
Small size No. 5 cuts $\frac{1}{8}$ " to $\frac{1}{2}$ " List Price \$0.80 Parcel Post extra.

Large size No. 6. cuts $\frac{3}{8}$ " to 1" List Price \$1.60 " " "

Set of two reamers cutting $\frac{1}{8}$ " to 1" List Price \$2.40 " " "

SPIRAL FLUTED TAPER REAMERS IN SETS

Everything we have said about the **GTD** Repairman's Taper Reamers also applies to the **GTD** Spiral Fluted Reamers. In addition the spiral flutes make the latter cut easier and the smaller degree of taper makes them more accurate. Each reamer is approximately $\frac{1}{32}$ " larger at the largest cutting diameter than the nominal size. The point of each reamer will enter the hole reamed by the next smaller size. These tools are regularly furnished with bit-brace shanks. Squared shanks supplied at the same price, if specified.



(**GTD** makes a complete line of all sizes of taper pin, hand and other types of reamers.)

Ask your hardware or implement dealer. If he can't supply you, write direct, giving us his name. Use the Order Blank.

GTD "LINCOLN" TWIST DRILLS



GTD "Lincoln" Bit-Stock Drill

Before you can use a tap you must drill a hole. Even if you don't want to put in a screw or stud, there are a thousand and one uses for a drill on a farm, and it isn't always necessary to have a special hand, breast or post drill either, although these tools are all very useful in making repairs.

Here is a GTD "Lincoln" Twist Drill with a taper square shank to fit the ordinary bit-brace.

It will drill iron, steel or other metals and will bore straight any kind of wood without splitting it. It is not injured by drilling into nails or screws which would ruin an auger bit, can be easily sharpened and will last for years with careful use.

GTD "Lincoln" Drills are sold separately or in sets. The set shown contains nine drills from $\frac{1}{16}$ " to $\frac{3}{8}$ " sizes, put up in a nicely finished hardwood block case with dust-cap.



Set No. 13

List price, Set No. 13 GTD Lincoln Bit Stock Drills for holes $\frac{1}{16}$ ", $\frac{3}{32}$ ", $\frac{1}{8}$ ", $\frac{5}{32}$ ", $\frac{3}{16}$ ", $\frac{7}{32}$ ", $\frac{1}{4}$ ", $\frac{5}{16}$ ", $\frac{3}{8}$ "—\$4.85. Parcel Post extra.

(Straight Shank Twist Drills, Tire Drills for Blacksmith's Drill Presses and many other types of drills can be furnished.)



No. 107 $\frac{1}{2}$ " Shank Drill for Silver-Deming Blacksmith's Presses



No. 108 $\frac{5}{8}$ " Shank Drill for Coe's Blacksmith's Presses

Two Types of GTD "LINCOLN" Blacksmith's Drills

Ask your hardware or implement dealer for GTD "Lincoln" Drills. If he can't supply you, write direct, giving us his name.

TAP DRILL SIZES

FOR PIPE THREADS



For Full Value Specify **GTD** LINCOLN Drills

Size Tap Inches	BRIGGS STANDARD		BRITISH STANDARD	
	Thread	Drill	Thread	Drill
1/8	27	21/64	28	5/16
1/4	18	27/64	19	7/16
3/8	18	9/16	19	9/16
1/2	14	11/16	14	23/32
5/8			14	25/32
3/4	14	29/32	14	29/32
7/8			14	1 1/16
1	11 1/2	1 1/8	11	1 5/32
1 1/4	11 1/2	1 15/32	11	1 1/2
1 1/2	11 1/2	1 23/32	11	1 23/32
1 3/4			11	1 31/32
2	11 1/2	2 3/16	11	2 3/16
2 1/4			11	2 13/32
2 1/2	8	2 9/16	11	2 25/32
2 3/4			11	3 1/32
3	8	3 3/16	11	3 9/32
3 1/4			11	3 1/2
3 1/2	8	3 11/16	11	3 3/4
3 3/4			11	4
4	8	4 3/16	11	4 1/4
4 1/2	8	4 11/16	11	4 3/4
5	8	5 1/4	11	5 1/4
5 1/2			11	5 3/4
6	8	6 5/16	11	6 1/4

Ask your hardware or implement dealer for **GTD** "Lincoln" Drills. If he can't supply you, write direct, giving us his name. Use the Order Blank.

TAP DRILL SIZES

FOR MACHINE SCREW THREADS



For Full Value Specify **GTD** LINCOLN Drills

Tap Size	Threads per Inch	Diameter Hole	Nearest Size Drill	Tap Size	Threads per Inch	Diameter Hole	Nearest Size Drill
0	80*	.048	$\frac{3}{64}$	10	32	.160	21
1	72*	.060	53	10	30*	.158	22
1	64	.058	54	10	24	.149	25
2	64*	.071	50	12	28*	.181	14
2	56	.069	51	12	24	.175	16
3	56*	.082	45	14	24*	.201	7
3	48	.079	47	14	20	.193	10
4	48*	.092	43	16	22*	.224	1 $\frac{7}{32}$
4	40	.088	44	16	20	.219	3
4	36	.085	45	16	18	.214	
5	44*	.103	37	18	20*	.245	D
5	40	.101	38	18	18	.240	C
5	36	.098	40	20	20*	.271	I
6	40*	.114	33	20	18	.266	H
6	36	.111	34	22	18*	.292	L
6	32	.108	36	22	16	.285	K
7	36*	.124	$\frac{1}{8}$	24	18	.318	O
7	32	.121	31	24	16*	.311	$\frac{5}{16}$
7	30	.119	31	26	16*	.337	R
8	36*	.137	29	26	14	.328	$\frac{21}{64}$
8	32	.134	29	28	16	.363	U
8	30	.132	30	28	14*	.354	T
9	32*	.147	26	30	16	.389	$\frac{25}{64}$
9	30	.145	27	30	14*	.380	V
9	24	.136	29				

* A. S. M. E. Standard.

We recommend drills for 75% depth of thread as this gives the maximum strength. The diameter in decimals given in third column represents the ideal hole to produce this. The drill size given is the nearest listed size.

Ask your hardware or implement dealer for **GTD** "Lincoln" Drills. If he can't supply you, write direct, giving us his name. Use the Order Blank.

TAP DRILL SIZES

FOR USS AND SAE AUTOMOBILE THREADS



For Full Value Specify GTD LINCOLN Drills

Tap Size	Threads per Inch	Diameter Hole	Nearest Size Drill	Tap Size	Threads per Inch	Diameter Hole	Nearest Size Drill
$\frac{1}{16}$	72	.049	$\frac{3}{64}$	$\frac{3}{16}$	30	.155	23
$\frac{1}{16}$	64	.047	$\frac{3}{64}$	$\frac{3}{16}$	24	.147	26
$\frac{1}{16}$	60	.046	56	$\frac{13}{64}$	32	.173	17
$\frac{5}{64}$	72	.065	52	$\frac{13}{64}$	30	.171	$\frac{11}{16}$
$\frac{5}{64}$	64	.063	$\frac{1}{16}$	$\frac{13}{64}$	24	.163	20
$\frac{5}{64}$	60	.062	$\frac{1}{16}$	$\frac{7}{32}$	32	.188	13
$\frac{3}{32}$	60	.078	53	$\frac{7}{32}$	28	.184	14
$\frac{3}{32}$	56	.076	48	$\frac{7}{32}$	24	.178	16
$\frac{3}{32}$	50	.074	49	$\frac{15}{64}$	32	.204	6
$\frac{3}{32}$	48	.073	49	$\frac{15}{64}$	28	.200	8
$\frac{7}{64}$	56	.092	43	$\frac{15}{64}$	24	.194	10
$\frac{7}{64}$	50	.090	43	$\frac{1}{4}$	32	.220	2
$\frac{7}{64}$	48	.089	43	$\frac{1}{4}$	28*	.215	3
$\frac{1}{8}$	48	.105	37	$\frac{1}{4}$	27	.214	3
$\frac{1}{8}$	40	.101	39	$\frac{1}{4}$	24	.209	4
$\frac{1}{8}$	36	.098	40	$\frac{1}{4}$	20	.201	7
$\frac{1}{8}$	32	.095	$\frac{3}{32}$	$\frac{5}{16}$	32	.282	$\frac{9}{32}$
$\frac{9}{64}$	40	.116	32	$\frac{5}{16}$	27	.276	J
$\frac{9}{64}$	36	.114	33	$\frac{5}{16}$	24*	.272	I
$\frac{9}{64}$	32	.110	35	$\frac{5}{16}$	20	.264	$\frac{17}{64}$
$\frac{5}{32}$	40	.132	30	$\frac{5}{16}$	18	.250	8
$\frac{5}{32}$	36	.129	30	$\frac{3}{8}$	27	.339	R
$\frac{5}{32}$	32	.126	$\frac{1}{8}$	$\frac{3}{8}$	24*	.334	Q
$\frac{11}{64}$	36	.145	27	$\frac{3}{8}$	20	.326	$\frac{21}{64}$
$\frac{11}{64}$	32	.141	28	$\frac{3}{8}$	16	.314	$\frac{5}{16}$
$\frac{3}{16}$	36	.161	20	$\frac{7}{16}$	27	.401	Y
$\frac{3}{16}$	32	.157	22	$\frac{7}{16}$	24	.397	X
				$\frac{7}{16}$	20*	.298	W
				$\frac{7}{16}$	14	.368	U

* S. A. E. Standard. (Used in Autos, Trucks and Tractors.)

We recommend drills for 75% depth of thread as this gives the maximum strength. The diameter in decimals given in third column represents the ideal hole to produce this. The drill size given is the nearest listed size.

Ask your hardware or implement dealer for GTD "Lincoln" Drills. If he can't supply you, write direct, giving us his name. Use the Order Blank.

TAP DRILL SIZES

FOR USS AND SAE AUTOMOBILE THREADS



For Full Value Specify **GTD** LINCOLN Drills

Tap Size	Threads per Inch	Diameter Hole	Nearest Size Drill	Tap Size	Threads per Inch	Diameter Hole	Nearest Size Drill
$\frac{1}{2}$	27	.464	$\frac{15}{32}$	$1\frac{1}{8}$	7	.986	$\frac{33}{64}$
$\frac{1}{2}$	24	.460	$\frac{29}{64}$	$1\frac{3}{16}$	7	1.048	$1\frac{3}{64}$
$\frac{1}{2}$	20*	.451	$\frac{29}{64}$	$1\frac{1}{4}$	12*	1.169	$1\frac{11}{64}$
$\frac{1}{2}$	13	.425	$\frac{27}{64}$	$1\frac{1}{4}$	7	1.111	$1\frac{7}{64}$
$\frac{1}{2}$	12	.419	$\frac{27}{64}$	$1\frac{1}{8}$	7	1.173	$1\frac{11}{64}$
$\frac{9}{16}$	27	.526	$\frac{33}{64}$	$1\frac{3}{8}$	12*	1.294	$1\frac{13}{64}$
$\frac{9}{16}$	18*	.508	$\frac{1}{2}$	$1\frac{3}{8}$	6	1.213	$1\frac{3}{32}$
$\frac{9}{16}$	12	.481	$\frac{31}{64}$	$1\frac{1}{2}$	12*	1.419	$1\frac{27}{64}$
$\frac{5}{8}$	27	.589	15 m/m	$1\frac{1}{2}$	6	1.338	$1\frac{13}{32}$
$\frac{5}{8}$	18*	.571	14.5 m/m	$1\frac{5}{8}$	5 $\frac{1}{2}$	1.448	$1\frac{9}{32}$
$\frac{5}{8}$	12	.544	$\frac{35}{64}$	$1\frac{3}{4}$	5	1.555	$1\frac{9}{16}$
$\frac{5}{8}$	11	.536	$\frac{17}{32}$	$1\frac{7}{8}$	5	1.680	$1\frac{11}{16}$
$\frac{11}{16}$	16*	.627	$\frac{5}{8}$	2	4 $\frac{1}{2}$	1.783	$1\frac{33}{64}$
$\frac{11}{16}$	11	.599	$\frac{39}{64}$	$2\frac{1}{8}$	4 $\frac{1}{2}$	1.909	$1\frac{33}{32}$
$\frac{3}{4}$	27	.714	$\frac{23}{32}$	$2\frac{1}{4}$	4 $\frac{1}{2}$	2.034	2 $\frac{3}{32}$
$\frac{3}{4}$	16*	.689	$\frac{11}{16}$	$2\frac{1}{8}$	4	2.131	2 $\frac{1}{8}$
$\frac{3}{4}$	12	.669	17 m/m	$2\frac{1}{2}$	4	2.256	2 $\frac{1}{4}$
$\frac{3}{4}$	10	.653	$\frac{21}{32}$	$2\frac{3}{8}$	4	2.381	2 $\frac{3}{8}$
$\frac{13}{16}$	12	.731	$\frac{47}{64}$	$2\frac{1}{2}$	4	2.506	2 $\frac{1}{2}$
$\frac{13}{16}$	10	.715	$\frac{23}{32}$	$2\frac{3}{4}$	4	2.597	2 $\frac{11}{32}$
$\frac{7}{8}$	27	.839	$\frac{27}{32}$	3	3 $\frac{1}{2}$	2.722	2 $\frac{11}{32}$
$\frac{7}{8}$	18*	.821	$\frac{13}{16}$	$3\frac{1}{8}$	3 $\frac{1}{2}$	2.847	2 $\frac{11}{32}$
$\frac{7}{8}$	14*	.805	$\frac{13}{16}$	$3\frac{1}{4}$	3 $\frac{1}{2}$	2.972	2 $\frac{11}{32}$
$\frac{7}{8}$	12	.794	$\frac{51}{64}$	$3\frac{3}{8}$	3 $\frac{1}{4}$	3.075	3 $\frac{1}{16}$
$\frac{7}{8}$	9	.767	$\frac{64}{64}$	$3\frac{1}{2}$	3 $\frac{1}{4}$	3.200	3 $\frac{3}{16}$
$\frac{15}{16}$	12	.856	$\frac{55}{64}$	$3\frac{5}{8}$	3	3.325	3 $\frac{5}{16}$
$\frac{15}{16}$	9	.829	$\frac{53}{64}$	$3\frac{3}{4}$	3	3.425	3 $\frac{7}{16}$
1	27	.964	$\frac{31}{32}$	$3\frac{7}{8}$	3	3.550	3 $\frac{9}{16}$
1	14*	.930	$\frac{15}{16}$	4	3	3.675	3 $\frac{11}{16}$
1	12	.919	$\frac{59}{64}$				
1	8	.878	$\frac{7}{8}$				
$1\frac{1}{16}$	8	.941	$\frac{15}{16}$				
$1\frac{1}{8}$	12*	1.044	$1\frac{3}{64}$				

* S. A. E. Standard. (Used in Autos, Trucks and Tractors.)

We recommend drills for 75% depth of thread as this gives the maximum strength. The diameter in decimals given in third column represents the ideal hole to produce this. The drill size given is the nearest listed size.

Ask your hardware or implement dealer for **GTD** "Lincoln" Drills. If he can't supply you, write direct, giving us his name. Use the Order Blank.

HOW TO ORDER

First, ask your local hardware or implement dealer to fill your order. In nine cases out of ten he can give you the **GTD** tools you need or will get them for you in a day or two. Most dealers handle **GTD** repair tools.

If for some reason, your dealer refuses to get you the genuine **GTD** tools, write direct to the Farm Service Man at Greenfield Tap and Die Corporation, sending him your order and the dealer's name. He will give your order his personal attention and see that the tools you need are shipped to you in the quickest time possible.

WRITING THE ORDER

1. Use the enclosed order blank or a sheet of paper.
2. Write your name and address plainly at the top of the paper, (better print it so we won't make any mistake in addressing the shipment).
3. State the town to ship goods to if it is different from your home or mail address.
4. State whether you want goods shipped by express, parcel post or freight. Otherwise we will ship the cheapest way.
5. Write plainly your dealer's name and address, and his reason for not getting you genuine **GTD** tools.
6. Put down how many of each article you want.
7. Put down name of article including "brand" name, if any. (If part of a set, name set.)
8. Put down catalog number of article.
9. Put down price of each article and figure up how much order amounts to.
10. Enclose express or postoffice money order, bank draft or your own personal bank check for the correct amount. If you send currency, always have your letter registered.
11. Write the following address on your envelope, put on 2-cent stamp and mail.

Farm Service Man
Greenfield Tap and Die Corporation
Greenfield, Mass.

SOMETHING INTERESTING ABOUT

GTD

Back in 1872 Wiley and Russell started to make "*Lightning*" and "*Green River*" taps and dies in Greenfield, Massachusetts. As the years rolled by, outcroppings from the parent plant sprung up, until in 1911, there were no less than three other flourishing tap and die companies; Wells Brothers, makers of the famous "*Little Giant*" line, F. E. Wells & Son, whose tools bore the names "*Wells*" and "*OK*," and the A. J. Smart Company who manufactured "*Smart*" taps and dies. In 1912 the Greenfield Tap and Die Corporation was formed by combining all of these companies into a single corporation, at the same time adding a line of pipe tools. Since then the Lincoln Twist Drill Company, of Taunton, Mass., has been acquired, so that it is now possible to obtain from this one concern a very complete equipment of GTD repair tools—in fact, practically all of the repair tools mentioned in "*How I Fixed It*" jobs. Furthermore these tools are uniformly high grade—the best the market affords, and the most economical to buy. They are made with exactly the same skill and from the same materials as are the tools we sell to the farm implement manufacturers. They are the result of practically a half-century's experience.

Dealers all over the world carry GTD repair tools on their shelves or will get them for you quickly. Insist on genuine GTD goods. Then if you are not entirely satisfied with them you have our unqualified guarantee to fall back on. Read it!

GUARANTEE

All GTD products are guaranteed against defects in material and workmanship.

(Should any defects become apparent in any of our products, before returning anything to us, please notify us promptly.)

Now notice the long list of products on the back cover. If you didn't see exactly what you want in the previous pages you may find some suggestions in this list, or send for a GTD catalog. Your copy is waiting. Make a check mark against it when you send in your order.



PRODUCTS

TAPS and DIES

SCREW-PLATES

TWIST DRILLS

REAMERS

GAGES

ASSORTMENTS OF PIPE TOOLS

PIPE WRENCHES

PIPE VISES

PIPE CUTTERS

PIPE STOCKS and DIES

PIPE TAPS and REAMERS

LATHES, GRINDERS, MACHINE TOOLS

TOOLS FOR FARMERS

TOOLS FOR REPAIRMEN

TOOLS FOR MANUFACTURERS

